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Vol. XLI
for 1974

DISCOVERIES IN THE WÂDĪ ED-DÂLIYEH

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THE ANNUAL OF THE AMERICAN
SCHOOLS OF ORIENTAL RESEARCH
Vol. XLI
for 1974

EDITED FOR THE TRUSTEES BY
DELBERT R. HILLERS

DISCOVERIES IN THE WÂDĪ ED-DÂLIYEH

edited by PAUL W. LAPP and NANCY L. LAPP

WITH CONTRIBUTIONS BY

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1974

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PREFACE

Before we left Jerusalem in 1968, my husband, Paul W. Lapp, already felt he had a full life's work before him in the publication of his various excavations. Since his life was tragically cut short last spring, this task has been left to others. To suppose satisfactory work can be done without him would be presumptuous. Although records were usually complete and accurate, much of the synthesis and conclusions—the chief end of his research—was still milling in his mind. No one can attempt to complete this part of his work. Yet, as a tribute to him and as a fulfillment of responsibility to the scholarly world, one must undertake as adequately as possible the publication of his work from the records and notes he left. Beyond that one must go on to his own research.

Of the soundings and excavations Paul Lapp undertook, the one nearest publication was the Wâdī ed-Dâliyeh cave clearance. From 1966 on he had hoped to have it completed momentarily, but the inevitable delays took place. Some of the special reports have just now been completed, the 1967 war brought new difficulties, and our move to Pittsburgh and his acceptance of a teaching position limited the time he could spend on research. But fortunately a great part of the work was complete and with the help of several colleagues I have been able to assemble the report in the last few months.

For Chapters I and II reports of my husband's were available and the editing task was minimal. The manuscript for Chapter I had been almost completed; Newsletters of the American Schools of Oriental Research, with a few additions, have formed the basis of Chapter II. The final responsibility for editing of both chapters is, however, mine.

Frank Moore Cross, Jr., had already undertaken the preparation of Chapter III on the papyrus finds. I owe a debt of thanks to him also for considerable advice and help in assembling the entire volume.

Some time ago I had prepared a treatment of the fourth-century pottery. For discussion of the MB I and Second-Revolt groups I asked the help of William Dever and George W. E. Nickelsburg, Jr., to fill the gaps my husband had left. Professor Nickelsburg also undertook study of some of the objects from Cave II.

The specialists' report in Chapter VII will no doubt prove to be one of the most significant and interesting portions of this volume. I must apologize on behalf of my husband as well as myself that several of these have been delayed so long before publication.

My husband and I owe special thanks to the Department of Antiquities of the Hashemite Kingdom of Jordan for their cooperation in this undertaking, as in all his excavations. For permission to clear the caves, for assistance from some of their best field people, and for accurate publicity concerning the finds, we are very grateful. We are thankful also to Qaid il-Asalki Muti Saidat, head of the Royal Jordanian Army communications center at the Dead Sea Camp, for the services of Corporal Minwar Yaqub Haddad and the use of a mine detector the first week of the second campaign.

The clearance of the caves as well as the purchase of the papyri were financed through the Manuscript Fund of the American Schools of Oriental Research, of which Mrs. Elizabeth Hay Bechtel has been the chief benefactress. Her encouragement and friendship have also added enthusiasm for this undertaking. To her and to the American Schools thanks are due for the opportunity to carry on this field work and to publish it.

This work would not have been possible without the staffs of the two campaigns of excavation, who worked under most risky and uncomfortable circumstances, including the Arab workers who served beyond the call of duty. We are grateful also to all those who helped in one way or another in the long path toward publication.

Special mention should be made of Fouad Zoghbi who made most of the drawings and has served as our chief liaison in Jerusalem—where the finds are still deposited—while we worked in Pittsburgh. Much appreciated are also the services made available to me by the administration of Pittsburgh Theological Seminary.

Finally, I cannot thank enough those friends and colleagues who have encouraged and made possible the completion of this work in what has been a difficult time. They cannot all be named, but there are numerous close friends, as well as my young children, whose cooperation and help I could not have done without.

Nancy L. Lapp

Pittsburgh, Pa.
February, 1971

Postscript:

We sincerely regret the delay in publication of this material, which has been in press since 1971. The delay, due to illness and labor problems, was beyond our control. In a few instances it has been possible to update the references, but the material is largely that compiled in 1971.

Nancy L. Lapp

Pittsburgh, Pa.
Nov., 1975.

CONTENTS

	Preface		v
	List of Illustrations and Plates		ix
	List of Abbreviated Titles		xi
I	An Account of the Discovery	Paul W. Lapp and Nancy L. Lapp	1
II	The Cave Clearances	Paul W. Lapp and Nancy L. Lapp	7
	Appendix: List of Loci and Associated Finds		13
III	The Papyri and Their Historical Implications	Frank Moore Cross, Jr.	17
IV	The Late Persian Pottery	Nancy L. Lapp	30
V	The Middle Bronze Occupation and Pottery of ‘Arâq en-Na‘sâneh (Cave II)	William G. Dever	33
VI	The Roman Occupation and Pottery of ‘Arâq en-Na‘sâneh (Cave II)	Nancy L. Lapp and George W. E. Nickelsburg, Jr.	49
VII	Other Finds		
	Other Pottery	Nancy L. Lapp	55
	Coins	Frank Moore Cross, Jr.	57
	Scarab	Frank Moore Cross, Jr.	59
	Textiles	Elisabeth Crowfoot	60
	Report on Animal Fibres	M. L. Ryder	78
	Report on the Dâliyeh Skin	M. L. Ryder	79
	Report on Dyes	G. W. Midgelow	80
	Additional Study of the Dyes	M. C. Whiting and Takeo Sugiura	80
	Report on Shoes and Leather Fragments	John H. Thornton	81
	Basketry	Elisabeth Crowfoot	83
	Wood	A. C. Western	85
	Seeds and Fruit	A. C. Western	88
	Cranial Material	Wilton Marion Krogman	89
	Animal Bones	M. Lyall-Watson	97
	Miscellaneous Small Finds	George W. E. Nickelsburg, Jr.	101
	Glass Vessels	Gladys Davidson Weinberg and Dan Barag	103
	Beads	Ben B. Cox	105
	Plates		Following page 107

LIST OF ILLUSTRATIONS

Figures in the Text

Chapter VI Section A-A of Cave II, Room 4.

Chapter VII "Textiles."

- Fig. A Starting-border as on no. 1.
- Fig. B Ghiordes knots in pile on no. 47.
- Fig. C Tubular weave, after Braulik, *Altägyptische Gewebe*, figs. 59, 60.
- Fig. D Looped buttonholes attached to no. 49.
- Fig. E Loops from edge of net (?), no. 60.
- Fig. F No. 12 with cord edge.

LIST OF PLATES

Following the Text

PLATE

1. MB I Pottery from Cave II.
2. MB I Pottery from Cave II.
3. MB I Pottery from Cave II.
4. MB I Pottery from Cave II.
5. MB I Pottery from Cave II, Room 2.
6. MB I Pottery from Cave II, Room 2.
7. MB I Pottery from Cave II, Room 2.
8. MB I Pottery from Cave II, Room 2.
9. MB I Pottery from Cave II, Room 2.
10. MB I Pottery from Cave II, Room 2.
11. MB I Pottery from Cave II, Rooms 2 and 4.
12. MB I Pottery from Cave II, Room 4.
13. MB I Pottery from Cave II, Room 5.
14. MB I and MB II Pottery from Cave I.
15. MB II B-C Pottery from Cave II, Rooms 2 and 4.
16. MB II B-C Pottery from Cave II, Room 5, and Iron I Pottery from Cave II, Room 2.
17. Iron I Pottery from Cave II, Rooms 2 and 4, and Iron II Pottery from Cave I.
18. Late Persian Storage Jars from Cave I.
19. Late Persian Storage Jars from Cave I.
20. Late Persian Jar Rims from Cave I.
21. Late Persian Jugs from Cave I.
22. Late Persian Pottery from Cave I.
23. Late Persian and Roman Pottery from Cave I.
24. Second Revolt Storage Jars from Cave II.
25. Second Revolt Jar Rims from Cave II.
26. Second Revolt Jar Rims from Cave II.
27. Second Revolt Jar Rims from Cave II.
28. Second Revolt Pottery from Cave II.
29. Second Revolt Cooking Pot Rims from Cave II.
30. Second Revolt and Mamluk Pottery from Cave II.
31. Wooden and Bone Objects.
32. Wooden Combs and Knife Blade and Handle.
33. Wooden Handles from Cave II, Room 4.
34. Wooden Handles from Cave II, Room 4.
35. Bronze Jug Handle from Cave II, Room 4.
36. Objects from Cave I.
37. Objects from Cave II.
38. Roman Glass from Cave II.
39. Roman Glass from Cave II.
40. Beads from Cave II, Room 4.
41. Contour map of the Wâdī ed-Dâliyeh district with Sub-District boundaries.
42. Rough plan of Mughâret Abū Shinjeh, Cave I.
43. Rough plan of ʿArâq en-Naʿsâneh, Cave II.
44. The MB I Peoples of Palestine.

45a. Looking down the Wâdī ed-Dâliyeh.
45b. Toward the Wâdī ed-Dâliyeh caves.
46a. Looking west up the Wâdī ed-Dâliyeh defile.
46b. Mughâret Abū Shinjeh in the Wâdī ed-Dâliyeh.
47a. The entrance of Cave I.
47b. Entering the cave passageway.
48a. Loading up camp supplies.
48b. The camp just above Mughâret Abū Shinjeh.
49a. The staff of the January 1963 sounding.
49b. The workers of the January 1963 sounding.
50a. The workers scurry up the wadi for a day's work.
50b. Beginning the trench into the mouth of Cave I.
51a. Opening off Cave I trench.
51b. The area of Cave I where the manuscripts had been found.
52a. Entrance to Cave I where pottery and bones were collected.
52b. Skulls and bones lined up at the mouth of the cave.
53a. The entrance to Cave II.
53b. A scene inside Cave II.
54a. The staff of the February 1964 clearance.
54b. The workers of the February 1964 clearance.
55a. Further excavation in the Manuscript Area.
55b. Crew at work in Cave I.
56a. Work with aid of lights and masks in Cave I.
56b. Two whole MB I pots in Cave II.
57a. Second Revolt hoard in Cave II.
57b. Section in Room 4 of Cave II.
58a. Sherds as discovered in Cave II.
58b. The Taʿâmireh entertain with dancing and music.

59. Chart of Scripts.
60. Small fragments of papyri found in the 1963 clearance.
61. The Seal of the Governor of Samaria.

62. Seals from the Dâliyeh Papyri.
63. Seals from the Dâliyeh Papyri.
64. MB I Pottery from Cave II.
65. MB I Pottery from Cave II.
66. MB I Pottery from Cave II.
67. MB I Pottery from Cave II.
68. MB I Pottery from Cave II.
69. MB I Pottery from Cave II.
70. MB I Pottery from Cave II.
71. MB I Pottery from Cave II.
72. Late Persian Storage Jars from Cave I.
73. Late Persian Storage Jars from Cave I.
74. Late Persian Pottery from Cave I.
75. Late Persian Pottery from Cave I.
76. Late Persian and Early Roman Pottery from Cave I.
77. Second Revolt Pottery from Cave II.
78. Second Revolt Pottery from Cave II.
79. Second Revolt Pottery from Cave II.
80. Coins from Cave I.
81. Coins and a scarab from Cave I.
82. Part of small child's tunic.
83. Fragments of a fine scarf.
84. Linen fragments.
85. Linen fragments.
86. Linen undyed cloth.
87. Plain linen cloth.
88. Basket weave linen and wool with colored band.
89. Fine wool fragment and wool tubular braid.
90. Tent Fabrics and Net.
91. Shoe and Leather Fragments.
92. Basketry.
93. Worked Wood.
94. Worked Wood.
95. Cranial Material.
96. Cranial Material.
97. Wood and Bone Objects, Knife Blade and Handle.
98. Wooden Handles.
99. Bronze Jug Handle.
100. Objects from Cave I and Cave II.
101. Beads and Second Revolt Coin from Cave II.
102a. Muhammad edh-Dhib Hassan, one of the Taʿâmireh workers.
102b. One of the workers shows a modern inhabitant of the cave.

LIST OF ABBREVIATED TITLES

AASOR	*Annual of the American Schools of Oriental Research*
ADAJ	*Annual of the Department of Antiquities of Jordan*
AJ	Josephus, *Antiquitates Judaicae*
'Alâyiq	James B. Pritchard. "The Excavation of Herodian Jericho, 1951," *AASOR*, XXXII-XXXIII. New Haven, 1958.
Ancient Gaza I, II	Flinders Petrie. *Ancient Gaza.* London, 1931, 1932.
ANEP^2	James B. Pritchard. *The Ancient Near East in Pictures.* 2nd ed. Princeton, 1969.
AP	A. Cowley, *Aramaic Papyri of the Fifth Century B. C.* Oxford, 1923.
AS IV	Elihu Grant and G. Ernest Wright. *Ain Shems Excavations, IV (Pottery).* Haverford, 1938.
BANE	G. Ernest Wright, ed. *The Bible and the Ancient Near East.* Garden City, New York, 1961.
BASOR	*Bulletin of the American Schools of Oriental Research*
BJ	Josephus, *Bellum Judaicum.*
BJRL	*Bulletin of the John Rylands Library*
DJD I	D. Barthelemy, J. T. Milik, *et al.* *Qumran Cave I, Discoveries in the Judaean Desert, I.* Oxford, 1955.
DJD II	P. Benoit, J. T. Milik, and R. de Vaux. *Les Grottes de Murabba'ât, Discoveries in the Judaean Desert,* II. Oxford, 1961.
DJDJ III	M. Baillet, J. T. Milik, and R. de Vaux. *Les 'Petites Grottes' de Qumrân, Discoveries in the Judaean Desert of Jordan,* III. Oxford, 1962.
Dura	R. Pfister and Louisa Bellinger. "The Textiles," *The Excavations at Dura-Europos,* IV, Pt. II. New Haven, 1945.
Galling	P. W. Lapp, "The Pottery of Palestine in the Persian Period," in *Archäologie und Altes Testament,* Festschrift für Kurt Galling. Tübingen, 1970. Pp. 179-197.
Gerar	Flinders Petrie. *Gerar.* London, 1928.
Gibeon	James B. Pritchard. *The Bronze Age Cemetery at Gibeon.* Philadelphia, 1963.
Hazor I, II, III-IV	Yigael Yadin *et al.* *Hazor* I, II, III-IV. Jerusalem, 1958, 1960, 1961.
HES I, II	G. A. Reisner, C. S. Fischer, and D. G. Lyon. *Harvard Excavations at Samaria, 1908-1910.* Cambridge, 1924.
HTR	*Harvard Theological Review*
IEJ	*Israel Exploration Journal*
Jericho I, II	Kathleen M. Kenyon. *Excavations at Jericho,* I, II. London, 1960, 1964.
JBL	*Journal of Biblical Literature*
JDS	Yigael Yadin. *The Finds from the Bar Kokhba Period in the "Cave of Letters," Judean Desert Studies.* Jerusalem, 1963.
JGS	*Journal of Glass Studies*
JNES	*Journal of Near Eastern Studies*
Kūfīn	Robert H. Smith. *Excavations in the Cemetery of Khirbet Kūfīn,* Palestine. London, 1962.
Lachish III	O. Tufnell. *Lachish III: The Iron Age.* London, 1953.
Lachish IV	O. Tufnell. *Lachish IV: The Bronze Age.* London, 1958.
Meg. I	R. S. Lamon and G. M. Shipton. *Megiddo I.* Chicago, 1939.
Meg. II	Gordon Loud. *Megiddo II.* Chicago, 1948.
Mirzbâneh Tombs	Paul W. Lapp. *The Dhahr Mirzbâneh Tombs: Three Intermediate Age Cemeteries in Jordan.* New Haven, 1966.
PCC	Paul W. Lapp. *Palestinian Ceramic Chronology, 200 B. C.—A. D. 70.* New Haven, 1961.
PEFA	*Palestine Exploration Fund, Annual*
PEQ	*Palestine Exploration Quarterly*
QDAP	*Quarterly of the Department of Antiquities in Palestine*
RB	*Revue Biblique*
SS III	J. W. Crowfoot. G. M. Crowfoot, and Kathleen M. Kenyon. *The Objects from Samaria. Samaria-Sebaste,* III. London, 1957.
TBM I	W. F. Albright. *The Excavation of Tell Beit Mirsim, I: The Pottery of the First Three Campaigns, AASOR, XII.* New Haven, 1932.
TBM I A	W. F. Albright. *The Excavation of Tell Beit Mirsim, I A: The Bronze Age Pottery of the Fourth Campaign, AASOR,* XIII. New Haven, 1933.
TBM II	W. F. Albright. *The Excavation of Tell Beit Mirsim, II: The Bronze Age, AASOR,* XVII. New Haven, 1938.
TBM III	W. F. Albright. *The Excavation of Tell Beit Mirsim, III: The Iron Age, AASOR, XXI-XXII.* New Haven, 1943.
TN I	C. C. McCown. *Tell en-Naṣbeh, I: Archaeological and Historical Results.* Berkeley and New Haven, 1947.
TN II	J. C. Wampler. *Tell en-Naṣbeh, II: The Pottery.* Berkeley and New Haven, 1947.
TP I, III	R. Pfister. *Textiles de Palmyra.* Paris, 1934, 1940.

Chapter I

AN ACCOUNT OF THE DISCOVERY

Paul Lapp

It was the third winter of drought. In the Old City of Jerusalem there were long queues at the water spigots. Drifting north past Jerusalem were tribes of the Taʿâmireh bedouin. Whole families and clans were moving together, at times afoot, at times by donkey train with an occasional camel. They were traveling up the tortuous central spine of Palestine, their flocks and herds consuming the sparse greenery. This year they had to move much farther north than usual, an added hardship in their spartan existence. It was nothing new. The Bible long ago celebrated long droughts as "seven years of famine."

A careful observer could note a lack of many able-bodied men on this northward trek. Some of the families were beginning to adapt to village life, and their men had temporary or even permanent jobs. Most of the rest were searching for scrolls or other antiquities. The discovery of the Dead Sea Scrolls in 1947 produced more changes in the life of the Taʿâmireh bedouin than it did in the text of the Old Testament. Even the pittance that finally reached their hands, out of the vast sums paid for the scrolls, was enough to stir the enterprising Taʿâmireh. The trend of the times among the bedouin is toward sedentarization, but if one has to work, the freedom of a treasure hunt, with its promise of gold, is much more attractive than any other job. As a result, many of the men were off digging tombs in Tekoa, exploring caves in the Wâdī Murabbaʿât, and combing ruins in the wilderness of Judea. Every week or so they took a taxi up the Jordan Valley road to see their families and then returned.

The Taʿâmireh are tall and slender, and there are few cracks and crevices in the rock around Jericho and southward through which they have not squirmed. The trek northward early in 1962 provided occasion to investigate some new holes in the rock. While the exploration was anything but systematic, there was one area with high priority north of Jericho. This was the vicinity of the Wâdī ed-Dâliyeh in the central hill country about halfway between Samaria and Jericho. That it was one of the most remote in central Palestine and accessible only by rugged footpaths was, of course, no problem for the Taʿâmireh. Natural processes had hollowed out perhaps even more large and labyrinthine caverns in this area than in the rest of the central ridge; in addition, the bedouin were attracted by the fact that a hoard of silver coins had been discovered in a cave here a couple of years before. This was the one area north of Jericho where treasures would certainly be found. As the Taʿâmireh pushed northward in pursuit of pasture, the Wâdī ed-Dâliyeh was a magnet to their trek. Here able-bodied men could also spend some time in pursuit of treasures.

For the bedouin the chronology of past events is linked to their great feasts. It was the beginning of Ramadan (early in February, 1962) when the Taʿâmireh began encamping at Khirbet Fasâyil. Ramadan, the ninth month of the Muslim year, is the month of fasting. Not even a drop of water or a cigarette touches the lips of the pious from sunrise to sunset during that month. Khirbet Fasâyil is about fifteen miles up the Jordan Valley from Jericho and five miles east of the Wâdī ed-Dâliyeh. The base camp was at Fasâyil near the spring, but many tents were pitched by the Wâdī ed-Dâliyeh. A few dotted the tracks between. The trek from Fasâyil to the wadi was uphill all the way, either up the canyon, or along the more circuitous path by which donkeys brought water from the Fasâyil spring to the Wâdī ed-Dâliyeh.

The Wâdī ed-Dâliyeh begins near the eastern edge of Palestine's central ridge (see Pl. 41). Here the ridge consists of rolling tableland cultivated by the villagers of el-Mughâyir, about four miles to the west. The Wâdī ed-Dâliyeh itself belonged to the village. *Wâdī* in Arab place names designates everything from a tiny gully to a rift of Grand Canyon proportions. The Wâdī ed-Dâliyeh best fits Webster's definition of a ravine: "a small narrow steep-sided valley that is larger than a gully and smaller than a canyon and is usually worn down by running water." *Dâliyeh* was "only a name" to the bedouin and the neighboring villagers. The Arabic word *dâliyeh* refers (among other things) to a creeping vine; presumably such vines grew in the area when the wadi received its name. The wadi was the uppermost element of a network of depressions down which the winter rains tumbled on their way to the Jordan River. According to Arab practice each element of the network had its own name compounded with *wâdī*. The Wâdī ed-Dâliyeh made a sharp gash into the eastern rim of Palestine's central hill country, with sheer cliffs a hundred feet high and more (Pls. 45 and 46). A prominent cascade divided the wadi into upper and lower portions. The cliffs on both sides of the wadi were honeycombed with caves. Many of them were small. Some of them were large and labyrinthine, with thousands of feet of passageways.

It was these labyrinthine caves that were the special object of Taʿâmireh investigations as they moved northward during the winter of 1962. Two of the largest caves were located at the heart of the Wâdi ed-Dâlīyeh. Above the cascade on the north side of the wadi was the entrance to ʿArâq[1] en-Naʿsâneh, "Caverns of the Sleepy One." Just below the cascade on the south bank of the wadi, was Mughâret Abū-Shinjeh, "Cave of the Father of the Dagger."[2]

Taʿâmireh cave investigation was not an exact science, but it was not merely aimless rummaging either. Père Roland de Vaux, amazed at the discovery of Dead Sea Scrolls in Cave 11, asked the Taʿâmireh discoverers how they had known to dig through such a depth of bat excrement to discover them. They replied that the cave was dry and, accordingly, a scroll discovery was possible. "Where did you learn this?" he asked. "You told us," was their reply. This meant that most of the obvious caves and holes in the rock which might look tempting to an uninitiated hunter were quickly dismissed by the Taʿâmireh. They also knew that ancient caverns and passageways were frequently sealed by the buildup of guano or other debris, by the rotting and collapse of limestone, or by the building up of lime deposits.

With this knowledge the Taʿâmireh employed primarily two methods of investigation in their search for scrolls. The first, and more obvious, was the exploration of passage upon passage in the labyrinthine caves, with test pits into the bat guano in promising chambers. Chambers eluding discovery by intensive exploration could be located by the tapping method. During the Wâdī ed-Dâliyeh clearance on one occasion I noted several Taʿâmireh precariously perched halfway up the steep rockface of the wadi. At first I thought they were trying to rescue a stranded animal. No, they had picks in their hands, and it looked as if they were carving graffiti. When I questioned them later, I discovered that they were pursuing their tapping exploration.

It was the hollow thud they heard while tapping on the rocky facade behind Qumrân that led to the discovery of Qumrân Cave 11, and it was the same hollow thud that led to the discovery of the Samaria papyri at the back of the main corridor of Mughâret Abū Shinjeh. About 60 feet back in the cave tapping suggested that there might be something beyond. Sledges and crowbars were brought for a massive assault on the limestone. After a couple of days of strained effort, a thin Taʿâmireh was able to squirm through a tiny passage to the cavern on the other side. He drew back in dismay to report that there were signs that Taʿâmireh had already been there. It was soon discovered that this spot was readily accessible from other passages of the cavern. The first Taʿâmireh visitors had apparently been on a tapping mission and had not made a serious probe into the guano beneath their feet.

---

[1] *ʿArâq* is the plural of *ʿIrq*, which occurs in such place-names as ʿIrq el-Aḥmar. Cf. E. Anati, *Palestine Before the Hebrews* (London, 1963), p. 119 *et passim.* The use of the singular in place-names apparently escaped the attention of C. C. McCown, "The ʿAraq el-Emir and the Tobiads," *Biblical Archeologist*, XX (1957), p. 67. The exact significance of *ʿIrq* and its plural in such names is uncertain. Note also that *el-Maghâyir*, the name of the village to the west of the caves, is the plural of *mughâreh* and means "The Caves," which suggests that the caves were the most prominent features of the area to those responsible for this name.

[2] Mughâret Abū Shinjeh is at coordinates 1890 x 1557 on the 1:100,000 map series; on the 1:20,000 at 1889 x 1556.

Now burrowing into the stinking powder began in earnest. It was no pleasant task. The pungent smell of excrement still lingers in Dead Sea Scroll caves cleared over a decade ago. It is so loosely packed that a foot plunges two to three feet into it before stopping. Each footstep raises clouds of fine dust which soon obscures the faint torchlight in the cave. There is a high incidence of cancer among those who work for longer periods in guano, but this is of no concern to the Taʿâmireh, when the lure of treasure is strong. The spot being dug was the inside end of two of the main cave passages. Beyond this were tiny crevices accessible only to the bats. The bat dung was unusually deep. The hole had to be continually expanded, and the excrement had to be pushed farther and farther away as it was dug to a depth of nearly six feet.

Six feet down something intriguing appeared. In fact, in the dim light it looked and felt like scrolls. The digger immediately rushed it out to the light of day. It proved to be nothing but fragments of matting. Continuing below the matting, the diggers turned up bone after bone—all human bones, as they immediately recognized. Then someone spied a gold ring and the hunt was on!

At this point a careful archaeologist would try to set up a foolproof surveillance while he planned a strategy for recording and recovering this piece of history; not so the Taʿâmireh. Seven men had not much more than a square meter apiece as they dug feverishly through the night. Breaks in the work came only when disputes arose about lines between claims and how best to keep from throwing dung in each other's faces. In their frenzy they tore ancient mats, trampled fragile ancient garments to bits with their feet, and smashed old pots to get at the gold they hoped was inside. Empty pots were smashed in disgust. After they had worked through the night, all they had to show was another gold ring and a few curious stamped lumps of clay, some of which had human figures on them. Convinced that there was no real treasure they left the cave in disgust to look more closely at their finds. Everything looked the same in the early morning light outside the cave except that a few of the pieces of matting seemed to have been written on.

At this point our sources become as confused as were the finds in the cave. One reliable source disagrees with another, and both disagree radically with a third. All the accounts were given in confidence, and that confidence must be honored. What follows is what seems to me to be a plausible reconstruction. It is not unlike the problem of attempting to reconstruct a series of events from three or more literary sources, and the conclusions are no more reliable. It seems that two of the seven diggers went that day with the fragments of what looked like scrolls to Bethlehem. They showed them to a fellow-tribesman who had recently become active as a middleman between Taʿâmireh diggers and antiquities merchants in Jerusalem. The middleman made a trip to Jerusalem late that afternoon and returned in the early morning. He told the two Taʿâmireh that the two fragments they had were worth very little but he thought that there must be more which would be quite valuable.

Early the next morning the two headed south from Bethlehem to a Taʿâmireh encampment near Tekoa where they consulted with a member of the tribe who was much experienced in scroll matters. He declined to become involved in the search but agreed to help out if scrolls were discovered. With that assurance the two returned to the Wâdī ed-Dâliyeh via Bethlehem, Jericho and Khirbet Fasâyil.

That evening around the campfire they discussed their strategy and traded stories about pots of gold and scrolls. The next morning they began a rather systematic search through the mixture of excrement, cloth, matting, bones, and sherds. Soon after they had begun, women appeared with some rather primitive sieves. After they had sifted through the debris, they pushed it back into the passageway they had blasted through the rock, effectively blocking it again. As they sifted they recovered a few beads, a small silver coin, and more clay sealings. After a couple of hours they found a small roll of papyrus. A quick view at the mouth of the cave confirmed their guess in the shadows. They rushed back, forgot about the sieves, and began ransacking the debris with their hands. Soon they had a dozen papyrus rolls, most of them only a few inches long, but one or two a foot long, still sealed with clay sealings. By mid-afternoon they felt that they had retrieved all the scroll material from that recess of the cave, and they began looking more carefully at other parts of the labyrinthine cave.

The next day two of their number went off with the scrolls to negotiate while the other five were to probe other promising areas of the cave and begin tapping for concealed chambers. The pair went off directly to their friend near Tekoa. He took a sample roll and spent the next several days attempting to find a buyer in Jerusalem and even in Amman. He apparently received a fairly attractive offer for he was prepared to offer the seven something under five hundred dollars for the scrolls. While the two were cooling their heels, word of the find began to spread and of course one of the first to hear was Khalil Iskander Shahin, commonly called Kando, the notorious middle man for the Dead Sea Scrolls. Before the friend of the pair returned with his offer, an intermediary from Kando had persuaded them that Kando should be permitted to make a bid, and no one ever out-bids Kando for scrolls. The friend of the pair was apparently somewhat taken back when his friend did not accept a generous offer and suggested that they would like to see how much Kando was willing to pay. He soon recovered his composure and agreed to serve as an intermediary with Kando. After consultations he returned with the word that Kando was willing to pay about seven hundred dollars for the lot; it seems safe to presume that Kando made a fairly handsome payment to the friend. The next morning the transaction was quickly completed; Kando had the scrolls and the two Taʿâmireh returned to the Wâdī ed-Dâliyeh loaded with Jordanian dinars.

It seems probable that the five who remained back at the wadi spent more of their time discussing the mission of their two friends than in further cave exploration. They reported that their search had been fruitless, but all disappointment was forgotten with news of the successful negotiations. Their new riches occupied their attention for the next several days. A joint trip to Amman brought new watches and transsistor radios to the encampments around Fasâyil. One of the group increased his holdings in a Bethlehem bus company, to another it was the end of a long hard struggle to accumulate a bride price. After these delightful days, they were ready to search for more treasure.

Each followed his own intuition, and as the days passed, more and more tribesmen forsook their explorations to the south as they learned of the discovery in the Wâdī ed-Dâliyeh. At the beginning of spring there were some seventy Taʿâmireh tapping the rock and digging test pits in the caves around Wâdī ed-Dâliyeh. Much of the effort was undoubtedly reduplicated, but even so there are few caves or rock-hollows in that area that have not been examined by the practiced eye and pick of a Taʿâmireh. These investigations produced nothing except a few more bullae and a couple of silver coins, presumably also from Mughâret Abū Shinjeh. In disappointment the Taʿâmireh gradually drifted away from the Wâdī ed-Dâliyeh.

There are two essential elements in an archaeological discovery: finding new material and understanding its significance. Frequently these occur together, as when a knowledgeable archaeologist comes upon a noteworthy artifact or a hoard of tablets during the course of a scientific excavation. But a substantial time gap frequently separates these two elements in discoveries of written documents from the ancient Near East. For example, Professor Yigael Yadin states that he knew of the existence of the temple scroll seven years before its "discovery."[3] "Discovery" is a tricky word and much misused in popularizing archaeology. Newspaper reports of our clearance in the caves of the Wâdī ed-Dâliyeh stated that we had "discovered" the Wâdī ed-Dâliyeh caves, despite the fact that these caves have been pinpointed on maps for centuries. Too often the scholar who first realizes the importance of the new material is considered the "discoverer," and discovery is equated with first apprehension by the western scholarly world. To that part of the Wâdī ed-Dâliyeh "discovery" we now turn.

Most of the papyrus fragments came into Kando's hands very shortly after their discovery. Kando kept the scrolls for some two months before informing the Curator of the Palestine Archaeological Museum, Yusef Saad. Most of the pieces were undoubtedly kept under lock and key, perhaps under the same floor from which the temple scroll was taken by the Israelis.[4] Meanwhile Kando may have been exploring the possibility of disposing of the papyri through some Near East antiquity dealers. He is known to have been in Beirut during this time and it is not wholly speculative to suggest that he might have had a sample roll with him. If he had made successful efforts in this direction, the discovery of the papyri might still have remained unknown, for who knows how many important groups of documents may yet come to light when the heirs of private collectors donate such finds to scholarly institutions. But fortunately, the Wâdī ed-Dâliyeh finds were brought to our attention in Jerusalem.

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[3] Y. Yadin, "The Temple Scroll," *Biblical Archaeologist*, XXX (1967), p. 135.

Late one afternoon in April, 1962, Père R. de Vaux of the École Biblique and Mr. Yusef Saad, Curator of the Palestine Archaeological Museum, paid a visit to the American School of Oriental Research. They were excited about the contents of a tiny box they brought with them. In it was a small piece of worm-eaten papyrus with Aramaic written on both sides. I spent most of the night consulting our palaeography notes and charts and combing Aramaic dictionaries. The next morning I reported to Père de Vaux that the script belonged to about 375 B.C., that the fragment was part of an official document probably having to do with military administration, and that, although the fragment was too small to make continuous sense, the city of Samaria was clearly mentioned.[5] Thus the Samaria Papyri became known to the scholarly world.

This papyrus sample was part of the larger find consisting of many more fragments, some small rolls of papyrus, one still sealed with seven sealings, a collection of several dozen sealings bearing distinct Persian and Greek figures, and a few coins. Attempts on all sides to raise funds and negotiate a reasonable purchase price went on through October.

When we returned from the American School fall trip on November 3, we learned that a fund had been established within the American Schools of Oriental Research which would provide funds for purchasing publication rights to manuscripts such as the Samaria Papyri.[6] Professor Frank M. Cross, Jr., was appointed chairman of a committee to administer the fund, and he flew out to Jerusalem, arriving November 14, to negotiate for the papyri.

Negotiations took the usual form when scrolls are to be purchased from the Taʿâmireh, with this added touch of drama: when the crucial time came for the appointment with Kando, Professor Cross did not appear. He finally had to be aroused from a deep sleep, worn out from the late hours over the excitement of the finds. By November 19 negotiations were complete. The agreement enabled the Palestine Archaeological Museum to purchase the papyri with exclusive rights of publication, and I agreed to undertake the excavation of the discovery site on the Schools' behalf.

Of course we were all anxious for a closer look at the purchases. That first night my wife Nancy and I watched with bated breath while Professor Cross's deft hand cut the seven seals of the prize piece. The fragile papyrus became pliable again when water was applied with a fine brush and the unrolling began. The flattened roll was unwound six turns and still no writing appeared! The next turn revealed that the original document had been wider, had had several more sealings, and on the missing portion signatures could be expected at the bottom where our piece was blank. When the top line was reached, Professor Cross immediately read: The twenty-first of Adar, year two, the Accession year of the reign of Darius. The reference was to the second year of Arsames and the first of Darius III, 336/5 B.C. With the subsequent discovery that one of the coins was minted by Mazdai in the last years of Darius III, came strong support for an hypothesis about the materials, developed by Professor Cross: that the documents were taken to the cave by refugees fleeing from Samaria when Alexander's forces destroyed it in 331 B.C.

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[4] *American Schools of Oriental Research Archaeological Newsletter*, November 13, 1967.

[5] This dating proved to be accurate within the limits set by relative typology. The papyrus in question (No. 15), now extensively reconstructed from several fragments, appears to date from the early reign of Artaxerxes III (358-338 B.C.).

[6] The Dead Sea Scrolls Fund of the American Schools of Oriental Research has been responsible for the purchase of a series of manuscript discoveries: some from Cave Four at Qumrân, the large Psalms Scroll of Cave Eleven at Qumrân, and most recently the Dâliyeh Papyri. The last two purchases have been made possible by benefactions of Mrs. Elizabeth Hay Bechtel.

After Professor Cross's departure on November 25, our interest was concentrated on locating the cave from which the manuscripts came. On December 2 a Taʿâmireh guide led Mr. Saad to the site. He brought back some Iron II (eighth century B.C.) sherds and report of the long, difficult, and adventuresome walk to the cave from a point about a kilometer west of Khirbet Fasâyil. Having gone in the afternoon, he did not have time to explore the cave interior but hurried back to reach his car before nightfall.

Mr. Saad engaged a Taʿâmireh guide to lead Père de Vaux, Nancy and me to the cave on December 11. When the Taʿâmireh failed to appear, we left for Fasâyil with Mr. Saad as our guide. Driving west over the trackless waste west of Fasâyil we were unable to locate any Taʿâmireh tribesmen. The few shepherd boys in the neighborhood ran off when we called them. Finally, one man appeared to greet us, but he persisted in his ignorance about the cave until Mr. Saad was able to assure him we were not spies. He then led us on an hour-and-a-half walk to the cave area (Pls. 45 and 46). It was honeycombed with caves, and in most of them heaps of sifted earth testified to the industry of the Taʿâmireh diggers. The first cave we examined had a large mouth with a tiny passage about large enough for a slender Taʿâmireh to squirm through at the back. Here we collected Middle Bronze I (20th century B.C.) and Early Roman sherds.

The caves are situated on either side of the narrow gorge of the Wâdī ed-Dâliyeh. A cascade divides the caves into an upper (western) and a lower (eastern) group. The caves just mentioned were in the upper group, but Mr. Saad called us to the lower group where he had located the manuscript cave (Pl. 47). While we ate our lunch at the entrance we noticed pieces of human skulls and picked up Middle Bronze, Iron II, and Early Roman pottery. After lunch we prepared our lamps and crawled on all fours as far as our lamps could reach—some sixty-five meters, as we later measured. Walking, crawling, bobbing our heads to avoid bats and overhanging rocks, and covering our faces to avoid as much of the excrement dust as we could, we reached the far end of the cave, the place later confirmed as the manuscript find-spot. Noting the vast amount of sifted debris and picking up the first pottery that was clearly of the fourth century B.C., we took another passage and climbed a rather steep ascent to the "Bat Dome." This was a large cavernous room with at least six longer passages leading from it. Its ceiling was covered with literally layers of screeching bats. We followed one of its passages some twenty meters and found here the same human bones and early Hellenistic pottery that we saw at the manuscript find-spot and the passage leading to it. By then we were ready for some fresh air and the walk back to Fasâyil.

Our discussions of plans for sounding in the caves became less and less excited and more and more sober as we trudged back to the Land-Rover. Logistics would be the chief problem. How could we get camping gear to the site over paths impossible for donkeys? What arrangements could be made to supply the site with water from five miles away? Could we get workers when the drought was driving the Taʿâmireh considerably north of Fasâyil? Where could a camp be placed when there was no flat land nearby? What kinds of masks and goggles could be obtained immediately for work in the dust, and what kind of lighting would be satisfactory for the caves? Would the bats present problems? Just what could be done with the small amount left in our archaeology budget? Then, too, the visit indicated that prospects for results were only fair. The pottery, which might provide an important key to Late Persian and early Hellenistic pottery chronology, would probably be mixed. The large amounts of sterile debris sifted by the Taʿâmireh would take much time to sift through, with prospects for perhaps nothing more than a few tiny pieces of papyri if we were lucky. Yet there were some places that seemed untouched by digging, and, in any case, the job had to be done.

Chapter II

THE CAVE CLEARANCES

Paul and Nancy Lapp

An expedition of the American School of Oriental Research, led by Paul Lapp, carried out two seasons of excavations in the Wâdī ed-Dâliyeh, the first in January, 1963, the second in February, 1964. The clearance of the cave of the papyrus finds, Mughâret Abū Shinjeh (labeled Cave I by the excavator), was the principal objective. However, early investigation of ʿArâq en-Naʿsâneh (labeled Cave II) revealed important Middle Bronze I and Roman Second Revolt occupation, and the subsequent clearance and study yielded very significant material for those periods. Exploration of several other caves up the wadi revealed nothing significant so work during both seasons was concentrated in Caves I and II.

Preliminary reports by Frank M. Cross, Jr., and Paul Lapp have described the difficulties and adventures of the field work.[1] The following accounts of the cave clearances were written by Paul Lapp soon after each season of work.[2] Further discussions of the stratigraphy of Cave II are presented in the chapters on the Middle Bronze and Roman occupations, Chapters V and VI below. Appended to the present chapter is a summary of the loci and associated finds.

The First Campaign: January, 1968

Having decided to postpone work until after Christmas, we set January 7 as the first day of digging and decided to dig two—and if the circumstances demanded it three—weeks. I took a foreman, technical man, a first load of gear, and driver to the site on January 4 to see if the logistics problems could be surmounted. Enough progress was made to justify a firm decision to go ahead. We decided that we would have to pitch some of our tents in the mouths of caves on both sides of the wadi and others were to be nestled against the bases of the sheer cliffs of the wadi after terrraces were constructed. (Those of us living within shadows of the cliffs tried to forget what might happen if rock above became dislodged or if it rained.) Faithful Ali agreed—for a price—to supply us with water by a circuitous path his donkeys could negotiate, and he persuaded about ten of his friends to stay on and work—for a price. In any case, no wage seemed unreasonable for climbing wadis five miles each way in order to work seven hours and a half in choking dust every day.

The residents at the American School were eager to participate in the cave clearance and the staff was soon set (Pl. 49). Fellows Alexander Di Lella and Willis Shotwell and Honorary Associate Dorothy Hill were field supervisors. Dr. Awni Dajani, Director of the Jordanian Department of Antiquities named Miss Najua Husseini as Department Representative, and she became an excellent field supervisor. Mr. Michael Brett, architect for ʿArâq el-Emîr, was with us the first week getting the plan of the manuscript cave. Back in Jerusalem Annual Professor R. B. Y. Scott served as object recorder and Mrs. Nancy Lapp as pottery recorder. The Department of Antiquities answered our need for an additional supervisor for the second week by sending Mr. Sami Rashid, but, unfortunately, he became ill and had to return. Muhammed Adawi served as our very capable cook, and Aboud Dhib Nasif served as driver and assisted in dig supervision. Nasir Diab from Balâṭah rendered outstanding services as a technical man.

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[1] Cross "The Discovery of the Samari Papyri," *Biblical Archaeologist,* 26 (1963), pp. 110-121; P. W. Lapp, "The Samaria Papyri," *Archaeology,* XVI (1963), pp. 204-206.

[2] These appeared in the American Schools of Oriental Research Archaeological Newsletter 1962-1963, No. 8 (February 1, 1963), and 1963-1964, No. 4 (March 14, 1964), and are used in revised form here by permission of the American Schools.

Most equipment needed was on hand at the School, but sister institutions were most cooperative in filling in the gaps. Père Roland de Vaux of the École Biblique and Mr. Sami Maddah of the Department of Antiquities let us borrow masks which were most helpful to our staff, and Mrs. Crystal Bennett of the British School lent us flood lamps.

Fellows Di Lella and Shotwell accompanied our second load of gear out Saturday morning, helped to see that the donkeys packed it to the cave area safely, and began setting up camp with the aid of Nasir Diab and six Taʿâmireh (Pl. 48). Aboud took Muhammed and our food out Sunday morning and the rest of us after Sunday dinner at the School. Our worries about logistics were dissolved by the hard work of the camp crew. When we arrived at dusk the picturesque camp nestled in the wadi was one hundred percent ready for living and work! Soon the supper bell rang and after our usual first dig meal (corned beef, cheese, and peanut butter sandwiches) and some discussions of dig procedures, we retired early, excited at the prospects of what tomorrow would bring.

The next morning, January 7, we were delighted to find that fourteen Taʿâmireh had appeared for work. Our plan for Cave I was to start one crew working in the purported manuscript area (designated I. 3), led by the careful digging of Nasir Diab, and to divide the remaining workers into two crews which would begin a trench from the mouth of the cave to the manuscript area (Pl. 50b). This trench (I. 2) would serve three purposes: it would make it possible to reach the inside of the cave without the tiring crawl and squirm; it would reveal any openings or passages in the rock that might have been missed by the treasure-hunters on one side or the other of the passage; and, most important, it would provide a key to the history of the cave's occupation. We were amazed that by the end of the first day the two crews had already extended the trench inward some 15 meters from the mouth of the cave and that the trench was already over a meter deep in spots. Perhaps we should have expected hard work, for in the time between our December visit and the beginning of the work a tremendous amount of dirt had been sifted in the cave. Meanwhile the manuscript area (I. 3, see Pl. 51b) was producing 14 full baskets of pottery (nearly all our plus or minus 331 B.C. horizon), human bones and skulls, cloth and sticks.

By the second day we were up to 26 workers and sent a fourth crew up to work in the cave with the squirm hole (designated Cave II), in the mouth of which we put our kitchen tent. Since Father Di Lella found it impossible to work inside Cave I, he was put in charge of Cave II where there was more air and less dust. Immediately Early Roman and Middle Bronze I potsherds began to show up in abundance. In Cave I the trenching operations indicated that a rather large alcove (I. 2 Locus 4, see Pl. 51a) had not been touched by previous digging. The manuscript area still gave no clear indication we were in the right spot, but the first evidence of food not consumed turned up in the form of date skins.

The next day, January 9, a trench into a second alcove (I. 2. 6) off the passageway full of undisturbed debris indicated the stratigraphy of the same occupational history as the manuscript area; fourth-century B.C. pots and bones covered by a thin scattering of Early Roman sherds. On this day, our third day of digging, came the first papyrus fragments, which confirmed the find spot of the manuscripts. By now the number of skulls from that spot had increased to about 35, including those of men, women, and children of all ages, and we had found large quantities of cloth (some beautifully embroidered), wood, olive and date pits, and balsan nuts (Pl. 52). We were especially interested in mat fragments in connection with the story told by Taʿâmireh who were among the first to enter the cave. They reported some 300 skeletons lying on mats in the cave. The best hypothesis to explain this (and subsequent) evidence seemed to be: Alexander's troops found this hiding place of the leading refugees from Samaria and suffocated them by building a large fire at the mouth of the cave. In any case, evidence pointed to a catastrophe in which a large number of refugees from Samaria perished in a cave simultaneously.

The surprise of our fourth day came when the trench in Cave II reached the inner room (Pl. 53). Not only was this a large room, it led to another 1500 feet of passages into the rock with many side passages, mostly unexplored by Taʿâmireh. At Cave I the trench was nearing completion, much of it dug in undisturbed debris, and many more baskets of pots, bones and other materials (including papyri) continued to come from the manuscript area.

By Friday we were all ready for a rest, but our largest piece of papyrus with six aramaic letters and a deep, four-spouted MB I lamp from Cave II buoyed up our spirits. The trench in Cave I was completed, and it was now easy to get to the manuscript area. We paid the workers, hired two watchmen, and left for the weekend.

Our work had been handicapped by a lack of good lighting, so Aboud and I spent Saturday in Jerusalem and Amman trying to locate a small generator that could be transported to the site and some batteries for floodlights. We could find neither, so we increased the number of our wick lanterns and had to continue working with them. In Cave II pressure lamps could be used, but in Cave I they consumed too much oxygen and produced too much heat. Dr. Dajani was very encouraging and helpful when we visited his office, and I helped him prepare a brief news release on our findings.

After an uneventful trip back in and a good night's sleep (no barking dogs), we were prepared for a rather uneventful week, but exciting finds continued. In fact, Monday was probably our most exciting day. First came a visit of a group of villagers from el-Mughâyir, the nearest village to the west of the caves. Here at last were people who could tell us where we were on our maps. The manuscript cave was Mughâret Abū Shinjeh, and Cave II was one of the ʿArâq en-Naʿsâneh. They had with them a beautiful Middle Bronze tomb group from a cave opened recently near their village, and they promised to shut off the cave until we would pay them to continue digging it. Being the owners of the land around the caves, they hoped to be hired for any future work at the caves. I could hardly wait to leave the villagers to see the surprise Father Di Lella had waiting for me in Cave II: three large MB I jars, each of a different type and nearly complete. One had a combed design on its shoulder and still contained grain, and the others were decorated with various rope and thumb-impressed moldings. Four more jars of similar types came to light during the week with large pieces of smaller vessels: carinated bowls and burnished jugs and juglets. The exciting finds of the day in the Cave I manuscript area were a clay sealing like those purchased with the papyri and a beautiful small scarab. We assigned one of our crews to a passage (I. 4) off the " bat dome," and while there were no surprises, the same pots and dolichocephalic skulls continued to appear. The day was topped by an accurate account of the dig on the evening news broadcast of the Hashemite Broadcasting Service.

The next day digging brought no new excitement, but after work a villager from el-Mughâyir led us to the Mughâret ed-Dâliyeh, which he claimed was larger than either of the caverns we were excavating. He pointed out evidence that Taʿâmireh were just beginning to work the cave, but the passages to the interior were blocked and we did not explore further. We also explored Mughâret Shiʿb el-Qubûr slightly to the north and considered both caves worthy of at least a small sounding.

Wednesday we had a group of twelve visitors: Dr. Dajani and three members of the Department of Antiquities, a group from the École Biblique led by Père de Vaux, Mrs. Crystal Bennett from the British School, Miss Diana Kirkbride, Father William Casey, and Mrs. Nancy Lapp. We were able to use the new trench to take the group through the manuscript cave with relative ease, and we surprised the group with the large pots in Cave II, which we had left in situ for show.

Besides the find of a beautiful silver earring in the manuscript area (Taʿâmireh reported a gold ring and golden earrings had also been found), the sounding ended quietly with no necessity to consider a third week. The entire job would take weeks or more. We were quite excited that the three large MB I pots that started from the dig nearly whole reached the School in the same condition late Saturday evening, after having been carried out to the Land-Rover by Taʿâmireh by hand. That night we could finally relax again, thankful that such a dangerous operation had been completed with no major mishaps and with a wealth of important material for study.

A word must be said about the unbelievable Taʿâmireh who worked for us. Their strength was amazing. They worked at least twice as hard as any workmen I have ever seen on any previous dig. From the first day we could see that their working code disgraced any slacker, and the lack of a foreman to curb their fiercely independent spirits was a distinct advantage. They scrambled up rocky slopes in less than two minutes like goats, when it took the best of us fifteen minutes of cautious climbing to do the same (Pl. 50a). There were no misgivings on the part of our best men when faced with the task of carrying out heavy pots a meter high and nearly as wide to the car five kilometers away. One of these was the famous Muhammed edh-Dhib Hassan (Pl. 102a), who began the search for manuscripts by throwing a stone into Qumrâm Cave I in 1947 (and thus contributed indirectly to the discovery of the Samaria Papyri). As compared with these sturdy men, after two weeks of coming out of Cave II in a crouched position for about 20 meters, I felt ready to join the Old Stone Age men to whom the hunched posture was quite normal.

THE SECOND CAMPAIGN: FEBRUARY, 1964

At the end of the two-week clearance in the Wâdi ed-Dâliyeh caves in January, 1963, we sealed the caves and set a guard. Ten days later came a report that a leading Taʿâmireh digger with five friends had hired a taxi from Jericho to el-Mughâyir, the nearest village west of the caves. From a visit to the caves about a week later we learned that many more than six Taʿâmireh must have been digging in Cave II in their usual frantic manner. Though we sealed the cave again with a feeling of futility, improved surveillance supported by sporadic army reconnaissance kept further treasure-hunting to a minimum. To the credit of the Taʿâmireh code of honor it should be noted that no digging was carried on near our operations and the piles of bones we had sealed inside Cave I were left undisturbed.

Our second clearance operation took place in February 1964. We began February 3 with a foreign staff of twelve and the support of our fifty workers in a campaign which was completed in just under three weeks (Pl. 54). Our non-Arab staff consisted of Fellows George Nickelsburg, Jr., and John M. Holt, Honorary Associate C. Umhau Wolf, and Dr. Siegfried Mittman as supervisors, with the writer serving as director. The Arab staff was composed of Muhammed Abu Ajamiyeh, who represented the Department of Antiquities; Corp. Minwar Yahub Haddad, operator of the mine detector; Aboud Dhib Nasif, driver, mechanic, and supervisor; Muhammed Adawi, cook; and our skilled diggers Nasir Diab, Muhammed Musa and Jabr Muhammed Hassan.

Since this winter had been as wet as the last was dry, we decided to set our camp some distance west of the caves in an open field. This was our greatest mistake. The first night about midnight heavy winds roused us to pound our tent stakes further into the red clay in a driving rain. The next night the winds were worse, and by breakfast time had reached such velocity (over 65 m. p. h.) that we were forced to break camp in a hurry to keep serious ripping of tents to a minimum. We retreated to the sheltered Cave II area where we had camped last season and got two tents up before the rains came. The Arab staff slept in Cave II that night. The rest of the staff, after a night in tents resting on mud, moved into a cave on the opposite side of the wadi. To a man the staff cheerfully made the best of conditions and were consoled by the fact that they were living in warmer quarters than the Jerusalem School provided. The actual excavating conditions were slightly improved over last year with the introduction of electricity into both caves by generators brought in by camel (Pl. 55b).

Through wind and rain work proceeded normally in Cave I and III, and only half a day was lost in Cave II. Cave I was the cave in which the Samaria Papyri were found, and Cave II was the source of our Middle Bronze I finds. Cave III was the Mughâret ed-Dâliyeh, about a mile west of Cave II at the head of Wâdī ed-Dâliyeh. Just north of it was Cave IV, and nothing of importance was found in either of the new caves. Cursory examination of a number of other caves convinced us that efforts should again be concentrated on Caves I and II.

In Cave I we undertook limited clearance operations along the trench to the Manuscript Area to probe for cavities in the cave wall and in the Bat Dome (I. 6) and Hot Room (I. 4), but our main task was sifting through the remaining debris in the Manuscript Area (Pl.

55a). This tedious operation produced few surprises: more of the sherds, broken bones, tatters of cloth, sticks, pits, and seeds we had become so familiar with last season—and the pieces seemed even smaller! We were somewhat encouraged by the few beads which turned up almost daily, a fibula, two bullae, and almost daily papyrus bits with hints of a letter or two. As we were nearing the end, we made our prize find: a larger papyrus fragment with six lines of text containing as many as eight letters in a line, apparently the only larger fragment missed by the Taʿâmireh (Pl. 60 right).

After the Manuscript Area was finished, we shifted our efforts to the passage (I. 8) between the Manuscript Area and the "Bat Dome." Here one of our men claimed to have found five silver coins. Significantly, his description of them matches the coins offered for sale with the Samaria Papyri. Here we got still more material familiar from the Manuscript area, plus a single tiny silver coin spotted by Muhammed Abu Ajamiyeh. It is of the Philisto-Arabian type, undoubtedly contemporary with the other finds.

There seemed to be nothing to change the conclusion of the first season about the fate of the Samaritans. Two independent reports from early diggers at the cave agree that some of the skeletons in the Manuscript Area were originally covered by mats and not lying upon them. A piece of cloth seems to be still adhering to one of the skull fragments. Certainly, this was neither a bone repository nor a traditional burial ground. The mat coverings might have been the last tender act by survivors of the catastrophe, and the relative scarcity of artifacts might be related to the same event.

In Cave II, as we had hoped, we more than doubled the number of large Middle Bronze I jars when we cleared the other half of the first inner room. In addition to these seventeen large jars and cooking pots, this season we found parts of several more fine carinated bowls and two nearly complete caliciform vessels. The last are especially important since closely parallel sherds appeared in our Middle Bronze I cemetery clearance, the Dhahr Mirzbâneh tombs.[3] There was practically nothing but pottery in the cave-room except a few bronze toggle pins.

The systematic clearance of the next room inside Cave II did produce some surprises. On the very first day of digging in this area, which seemed almost hopelessly torn up by the Taʿâmireh, a group of six daggers or keys with wooden handles preserved, a handle of a bronze jug, and a pile of 96 beads turned up (Pl. 57a). Baskets of pottery came from this room to the mouth of the cave in rapid succession. The sherds soon made it clear that we were dealing with an important occupation of the cave in the second century A.D., with material to be assigned to the time of the Second Jewish Revolt. This was further confirmed by the parallels, which Fellow Nickelsburg found from Murabbaʿât and Masada, for the bronze jug handle, the iron knife or key group, as well as a wooden bowl and wooden combs. Typically, most of the sherds are from common ovoid store jars, with a few bowls, jugs, and cooking pots represented. Three of the jars are inscribed, one with Hebrew, another with Greek, and a third probably with a potter's marks. Also from this room came the largest and best made of all the Middle Bronze I jars.

At the beginning of the third week, our objectives were nearly accomplished, and it appeared that we would be able to get away a day or two earlier than planned. Several of our Taʿâmireh friends did not like the prospect of losing a good job so soon, and Muhammed Musa undertook the job of trying to convince me that there were still many potential treasure spots in Cave II which had not yet been explored. Several of these I already knew about, but they did not seem especially attractive. They were too damp for manuscripts; there were very few sherds, but, of course, a coin hoard might be found. Then the two of us squirmed on our bellies into a small room through a passage too small for the third and larger number of our group to come along. This room had a good scattering of sherds from the second century A.D. We repeated the squirming process, entering a second room with similar pottery. A passage led to another room with the same sherds and no exit, but another passage led to a larger room, then to a fifth and sixth room each increasing in size. The sixth was a fairly large cavern in which we could walk around to explore its nooks and crannies. We did not linger long here, for Muhammed found a shaft which led to an underground wadi which extended as far as our spotlights penetrated in either direction. The bats were hanging in layers on the walls, and Muhammed and I alternated shrieks when they landed on us. After what seemed like a kilometer but was only a couple of city blocks the passage narrowed, and we passed through a tiny opening into a cavern in which one might have placed a football stadium. The air was warm and humid enough to keep the rocks slippery. We began to explore the passages off the cavern, but were afraid to go too far in any of them. When we were ready to go back, Muhammed had lost his sense of direction and rushed about frantically searching for the tiny exit. Finally, when he slipped and hurt his leg, he became more composed, and I was able to make a systematic search, which led to the exit in a few minutes. We had not made a new discovery. There were scattered evidences of recent diggings, and a few sherds and bones here and there told us that this underground labyrinth was known in the second century A.D. By now we were only concerned with getting out, and it was quite a relief to get back to the familiar part of the cave after over two hours of exploring.

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[3] Cf. Paul W. Lapp, *The Dhahr Mirzbâneh Tombs*, American Schools of Oriental Research, Publications of the Jerusalem School, IV (New Haven, 1966).

Far from luring to more work in Cave II, this adventure convinced me that, aside from clearing the first few small rooms, we should turn the whole thing over to the Taʿâmireh or anyone else whose spirit of adventure would be less easily dampened than mine. So we left the caves open when we left. We were not sure that all important finds had been made, but we were convinced that it would be much more safe and sensible to pay off a lucky adventurer than to continue the search.

APPENDIX

LIST OF LOCI AND ASSOCIATED FINDS

(e. = east, eastern; s. = south, southern, etc.;
LP = Late Persian; MB = Middle Bronze; R = Roman)

Cave I Mughâret Abū Shinjeh

Area	Designation	Locus	Description	Finds
I.1	Entrance trench	I.1.1	inner (s.) part of I.1; surface fill of loose earth	LP, R sherds, flints, bones
		I.1.2	outer (n.) part of I.1; surface fill of loose earth	Iron II, LP sherds, flints, modern knife
I.2	Trench between I.1 and I.3	I.2.1	close to bend in cave wall between I.1 and I.2	MB, LP, R sherds, flints, bones
		I.2.2	12.6 m. southwest of I.2.1	MB, Iron II, LP, R sherds, bones, cloth
			"second trench" after second bend—16 m. to I.3.1	
			Area A—near bend	
			surface of loose gray earth	LP, R sherds piece of papyrus, bones, sticks. cloth, date and olive pits
			hard-packed earth at depth of .36 m.	very few sherds and bones
			Area B—near I.3.1	LP, R sherds; bones, wooden bowl #10, horseshoe #9
			narrow passage to I.3	
			surface of gray loose earth, 16-20 m. deep	LP, few R sherds; bones, sticks, cloth
			red hard-packed earth with large stones to 65 cm. deep	very few sherds after 50 cm. deep
			1964 widening near I.2.4 to w. rock-wall	MB I rim, LP, R sherds; bones, cloth, mat straw, sticks, balsan nuts
		I.2.3	lower layer of I.2.2 in first bend at depth of .50 m., hard earth 20 cm. thick	LP sherds; animal bones
		I.2.4	opening, new branch cave. 1.44 m. to w. of bend between I.1 and I.2	few LP sherds only animal bones
		I.2.5	below I.2.3; 12.80 m. w. of bend between I.1 and I.2 at mouth of 2nd cavity; depth of 1.60 m; red earth to bedrock	only stones

		I.2.6	second cavity w. of bend	
			surface of loose earth	LP, few R sherds; bones, olive pits
			harder earth to bedrock	no finds
		I.2.7	area of I.2.2, 9.70 m. from I.2.6 to s. end of I.2, depth of .70 m.; perhaps I.3 dump material	LP, R sherds; many bones, figs, garlic, date pits
I.3	Manuscript Area	I.3.1	mixed debris of guano, roof fall, human debris, piled against rock ledge in entrance to I.3.2	LP sherds bones
			127 x 115 m.; sifted to bedrock	
		I.3.2	area of manuscript find, all disturbed from bedouin search mixed debris of guano, roof fall, sterile earth from bottom of cave, sherds, sticks, bones, etc.	few MB, LP, few R sherds; bones, cloth, wood; papyrus fragments, including #27, #28, #26, #29 (Pl. 60); clay sealings #42, #43, #13, #22; scarab #11; wooden bowls and lid fragments #4, #78, #5; comb #6; toggle pin #44; silver earring #21; beads, alabaster, shoe leather, yarn, cord, balsan nuts, olive and date pits, uneaten dates with skins, carob pods, eggshells, bamboo, skins (some with hair)
		I.3.3	cave discovered at end of I.3.2 near entrance:	skull piece, some nuts, olive and date pits
			rest of cave sterile soil	
			Mine detector unable to locate evidence of metal (Feb. 5, 1964) so designated additional dump area	
I.4	Hot Room	I.4	large cave with several small openings, damp air	
			a) thin hard layer of dark gray-brown dust to ca. 8 cm. thick	LP sherds; bones, cloth, sticks
			b) floor of stones 10-25 cm. thick	no finds
			c) layer of soft earth 30-40 cm. thick	no finds
I.5	Slide off Bat Dome	I.5	southwest passage off I.6 fear of slide stopped work	no finds
I.6	Bat Dome	I.6	slight deposit on bedrock	few LP sherds; bones
I.7	N. of Bat Dome	I.7	approximately halfway to I.4	LP body sherds; papyrus fragments, few bones, cloth, sticks, beads, olive pits, balsan nuts
I.8	Passage n. from I.3 dump	I.8	fine guano and small stones (where purchased coins were said to have come from)	LP sherds; papyrus fragment, coin #91; earrings #54, #58; comb #53, beads, alabaster fragment, cloth, sticks, axe head?, stone pestle?, few seeds, almond, walnut shell

Cave II ʿArâq en-Naʿsâneh

Area	Designation	Locus	Description	Finds
II.1	" Second " chamber of cave	II.1.1	clearing bat dung. all of II.1 no stratigraphy, including plastered area, .6 x .4 m. on e. side	MB I, R sherds; lamp, Pl. 1: 1; lid #2, comb #3 bones, flints, cloth, olive pits, charcoal
		I.1. 2	area around storage jar, n. end near II.2	pot, Pl. 1: 2
		II.1.3	trench e. of II.1	few sherds
II.2	" Room " n. of II.1	II.2.1	s. in II.2, around pots	MB I, R sherds; pots, Pl. 1: 3, 4
		II.2.2	trench extending n. and s.	MB I, R sherds; animal bones
		II.2.3	n. end of trench II.2.2	parts of pots, Pl. 1: 5, 6
		II.2.4	e. of trench II.2.2 and II.2.3	MB I, R sherds; pots, Pl. 1: 7, 2: 9; bowl #23, glass, cloth, charcoal, bones, teeth
		II.2.5	alcove in e. section II.2	MB I, R sherds; bones, glass
		II.2.6	trench under II.2.3, extending through mouth of II.3	MB I, R sherds; pot, Pl. 2: 8; glass
		II,2.7	dump in northwest area of II.2	MB I, R sherds; bones, glass
		II.2.8	dump in southwest area of II.2	MB I, R sherds; marked jar, Pl. 30: 1; bones, glass
		II.2.9	below II.2.7	MB I, R, few Mamluk sherds; pots, Pl. 2: 10, 3: 16, 17; marked sherd, Pl. 37: 1, flints, glass, cloth
		II.2.10	below II.2.8	MB I, R sherds; pots, Pl. 2: 11, 12, 3: 13, 15; coin #90, objects #65, #87, #88, #89; beads, glass
		II.2.2	1 meter trench n. part II.2.10 going w.	MB I, R sherds; pots, Pl. 3: 14, 4: 18; object #66, glass
II.3	Passage n. of II.2	II.3	passageway excavated to II.4	sherds, glass
II.4	Large room n. of II.3	II.4.1	trench e. side II.4, levels 1 and 2 of section	MB I, R, few Mamluk sherds; cache " c " Pl. 43: knife blade and handle #82, wooden handles, #68-72, #74, #83, #84, bronze handle #73; cache " b " Pl. 43: beads, Pl. 40
		II.4.2	trench n. side and w. of alcove, II.4.5	MB I, R sherds
		II.4.3	surface of alcove II.4.5, disturbed	MB I, R sherds
		II.4.4	Bottom of trench II.4.2	2 MB I sherds probably from upper layers
		II.4.5	north alcove of II.4, upper 3 layers of section	MB I, R sherds; few olive pits
		II.4.6	pot at n. end of I.4.5	MB I pot, Pl. 4: 21
		II.4.7	around MB I pot in II.4.5	MB I, R sherds

	II.4.8	area northwest of II.3	few MB 1, mostly R sherds, glass, bead
	II.4.9	trench e. side of II.4.5	no finds
	II.4.10	pit in II.4.5	R sherds, olive pits
	II.4.11	trench n. end of room, toward w.	MB I, R sherds, animal bones
	II.4.12	room and passage n. of II.4.5	few MB I, R sherds
	II.4.13	trench between II.4.11 and II.4.2	few MB I, mostly R sherds, olive pits, acorn
	II.4.14	pit in II.4.18	few MB I, mostly R sherds; animal bones
	II.4.15	continues II.4.1 s. to II.3	mostly MB I, some R sherds, grinding stone
	II.4.16	room n. of II.4.11 and II.4.13	MB I, R sherds, object #77, glass, flint, seeds
	II.4.17	passageway northwest of II.4	few MB I, mostly R sherds, glass
	II.4.18	s. of II.4.13	few MB I, mostly R sherds
	II.4.19	w. third of room, e. of II.4.8	MB I, R, Arab sherds, cloth, matting, glass, seeds
	II.4.20	center third of room, between II.4.19 and II.4.21	MB I, Iron I, R sherds, cloth, seed
	II.4.21	e. third of room, between II.4.20 and II.4.1	MB I, R, Mamluk sherds, glass, cloth, matting, nets
	II.4.22	dump removal center of room	MB I, R sherds
	II.4.23	in II.4.20	MB I pot, Pl. 4: 20
	II.4.24	in II.4.20	MB I pot, Pl. 4: 19
	II.4.25	pit in II.4.19	MB I and few R sherds perhaps from above
II.5 Small room w. of II.2		excavated trench and areas northeast, southeast, southwest, northwest	nearly all MB I sherds, few R
II.6 N. of II.4, third room toward wadi hole			R sherds, 1 Mamluk sherd, glass
II.7 Room next to II.6			mostly R sherds, 1 Mamluk, marked sherd, Pl. 37: 2

Cave III Mughâret ed-Dâliyeh

Trench 1	s. side of cave, few cm. to bedrock	1 ribbed sherd
Trench 2	passage to n. to dead end or block by roof fall	no sherds, few bones, cartridge shells
Trench 3	n. side to bedrock	few ribbed sherds, bones

CHAPTER III

THE PAPYRI AND THEIR HISTORICAL IMPLICATIONS

FRANK MOORE CROSS, JR.

THE HISTORICAL SETTING [1]

Evidence points to the last third of the fourth century B.C. for the abandonment of the series of late pre-Alexandrine documents and artifacts in the Dâliyeh cave. A precise occasion for the dread event easily suggests itself. If Josephus is to be believed, the Samaritans initially ingratiated themselves with Alexander.[2] Later while Alexander was in Egypt, Curtius reports,[3] the Samaritans burned alive Andromachus, Alexander's prefect in Syria. The act was not only a heinous crime, it was the first sign of revolt in Syria-Palestine, and Alexander returned in all haste to Samaria, and according to Curtius took vengeance on the murderers who were "delivered up to him." According to Syncellus, and one passage in the *Chronicon* of Eusebius, Alexander destroyed the city and settled a Macedonian colony on the site; according to another passage in Eusebius, and Jerome, it was Perdiccas who settled the city with Macedonians.[4] While it is highly likely that Alexander destroyed the city, it is probable that he hurried to Mesopotamia, and that Perdiccas during Alexander's lifetime was designated to found the Macedonian city.[5]

This construction of the events now has some support in archaeological data. G. Ernest Wright [6] has recently argued that two circumstances, the rebuilding of Shechem after a long abandonment in the late fourth century and the contemporary appearance of towers at Samaria constructed in Greek rather than Palestinian design are most easily explained if one supposes that Samaria was resettled by Macedonians in the time of Alexander, and that the Samaritans at the same time returned to Shechem to found their new capital.

The incident that left the Wâdī ed-Dâliyeh finds to be discovered by the Taʿâmireh more than two thousand years later may then be described as follows. The leaders in Samaria who were implicated in the rebellious acts that led to the prefect's death fled Samaria on learning of Alexander's rapid march on the city. Presumably they followed the main road down the Wâdī Fârʿah into the wilderness, and found temporary refuge in the Wâdī ed-Dâliyeh cave. A great number fled, whole families, fairly well supplied with food. Their origin and status is well attested by their seals and their legal documents. They were discovered in their hiding place by the Macedonians, either by assiduous search or, more likely, by information received from their fellows who remained in Samaria.[7] Their death may have been by suffocation, Alexander's troops building a large fire at the mouth of the cave.[8] Two independent reports from some of the early Taʿâmireh diggers at the cave agree that some of the skeletons in the manuscript area were originally covered by mats and not lying upon them. A piece of cloth seems to be still adhering to one of the skull fragments. Certainly, this was neither a bone repository nor a traditional burying ground. The covering with matting might have been the last tender act by survivors of the catastrophe, and the relative scarcity of artifacts might be related to the same event. The Taʿâmireh reported some three hundrd skeletons lying on mats. Evidence clearly pointed to a catastrophe in which a large number of refugees from Samaria perished in a cave simultaneously.

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[1] This account of the historical setting is that of F. M. Cross, Jr., "The Discovery of the Samaria Papyri," *Biblical Archaeologist*, XXVI (1963), pp. 118-119.

[2] *Antiq.* xi. 297-345 (ed. Marcus). On the special historical problems of this section, see Marcus' discussion and references in Appendix B, pp. 498-511, and Appendix C, pp. 513-532.

[3] Q. Curtius Rufus, *Hist. Alex.* (ed. Hedicke), iv. 8. 9-10.

[4] For references and a critical discussion of the problems of the texts, see R. Marcus, *op. cit.*, Appendix C.

[5] This is the solution already suggested in essential form by Wilrich and Schürer and most recently supported by V. Tscherikower, *Hellenistic Civilization and the Jews* (Philadelphia, 1959), pp. 47 f. and 103 f. Elias Bickerman writes, "It often happened that when a Greek colony was established, native villages under its control formed a union around an ancestral sanctuary. Following the same pattern, the countryside of (now Macedonian) Samaria constituted an organization, in Greek style, the Sidonians of Shechem, for the purpose of serving the god of Israel. Shechem, the most ancient capital and the most sacred site of Israel, became the natural center of the confederation." (*From Ezra to the Last of the Maccabees* [New York, 1962], pp. 43 f.).

[6] "The Samaritans of Shechem," *HTR*, LV (1962), pp. 366-377; on the date of the temple on Mt. Gerizim, see R. J. Bull and G. Ernest Wright, "Newly Discovered Temples on Mt. Gerizim in Jordan," *HTR*, LVIII (1965), pp. 234-237.

THE PAPYRI AND THEIR HISTORICAL IMPLICATIONS [9]

Our preliminary examination of the lot of papyri and sealings (made on November 17, prior to purchase) gave rise to mixed feelings. On the one hand the papyri were in an advanced state of decay, worm eaten, and, for the most part, in small fragments. The best preserved papyrus (No. 1) bearing seven seals intact appeared to be complete. Two or three others were extensively preserved. We were to find later that even Papyrus 1 was incomplete, and, contrary to our expectations, that small fragments, of which we had several boxes, rarely joined to the larger pieces of papyri. We were in possession of the last remnants of a very large corpus of documents. On the other hand, one of the first items to come to our attention was a sealing affixed to the remnants of a papyrus (No. 5; see Pl. 61) inscribed in a clear Palaeo-Hebrew script (not the Aramaic hand of the papyri). It read:

> *[ ]yhw bn [sn']*
> *blṭ pḥt šmr⌈n⌉*
> "... yahū, son of [San]ballat, governor of Samaria."

The first name, on the basis of later study, probably is to be read *[lyšʿ ?]yhw*, [Belonging to Yĕšaʿ]yahū.[10]

It was evident that the governor of Samaria had affixed his seal to this papyrus, and that he possessed the familiar name of the governor of Samaria in the days of Nehemiah: Sanballat (Sin'uballiṭ).[11] There could be no doubt that, however fragmentary, the new find of papyri was of extraordinary importance.

Another fragment which came to hand in the first viewing of the lot from the Wâdī ed-Dâliyeh proved to be the piece studied by

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[7] Curtius' words, cited above, could easily be so construed.

[8] Parallels are not difficult to discover. George Nickelsburg has called our attention to two occasions when Josephus speaks of "burning" or suffocating people in caves, one during the reign of Herod (*BJ* 1.311 and *AJ* 14.428) and another at the time of Antiochus Epiphanes (*AJ* 12.275; cf. 2 Macc. 6:11; 1 Macc. 2). Grisly modern parallels are recorded by E. Pellissier de Reynaud, *Annales algériennes*, III (nouvelle édition, Paris, 1854), pp. 167-169. Pellissier was eyewitness to an episode in 1845 at Dahra in Algeria when the French built a fire at the mouth of a cave in which a large number of insurgents, men, women and children, had taken refuge. When the French finally entered the cave, they found some five hundred dead, many others close to death from suffocation.

[9] This section is an expansion of the lecture given at the Symposium on Biblical Archaeology held in Berkeley and San Anselmo, March 16, 1966. The lecture was published under the title "Aspects of Samaritan and Jewish History in Late Persian and Hellenistic Times," *HTR* LXIX (1966), pp. 201-211. Cf. also "The Discovery of the Samaria Papyri," *Biblical Archeologist*, XXVI (1963), pp. 110-121, and "Papyri of the Fourth Century B.C. from Dâliyeh," in *New Directions in Biblical Archaeology*, edd. D. N. Freedman and J. C. Greenfield (Garden City, N.Y., 1969).

[10] The following pertinent readings are found in the Dâliyeh papyri or their sealings:

(1) *[yš]wʿ* (or *[yd]wʿ*) *br sn'blṭ wḥnn sgn'* ... (Papyrus 14)
(2) *qdm [Ḥ]nnyh pḥṭ šmryn* ... (Papyrus 8)
(3) *[ysʿ?]yhw bn [sn']*
blṭ pḥt šmr⌈n⌉
(4) *ly[š/dw]ʿ*

The last two readings are in Palaeo-Hebrew on sealings. They are the only inscribed seals in the lot of more than 125 impressions and seal rings. Evidently, in Persian fashion, only officials had inscribed seals. Hanan the prefect probably must be equated with the governor Hananiah, suggesting that he succeeded an older brother Yĕšūʿ/Yĕšaʿyahū in the governorship. The alternation of caritatives (Ḥanan, Yĕšūʿ) and formal names (Ḥananyah, Yĕšaʿyahū) is not unexpected in this period.

[11] Cf. Neh. 2:10, 19; 3:33; 4:1; 6:1, 2, 5, 12, 14; 13:28 (snblṭ); Cowley, *AP* 30:29; Dâliyeh P. 14 (sn'blṭ).

Professor and Mrs. Lapp. The last line on the reverse read *[b]šmryn šṭrʾ znh [k]tyb*, "this document was written in Samaria." Above, on the preceding line, partly broken, appeared the names of the officials before whom the document was executed: *[qdm yš]wʿ br snʾblṭ ḥnn sgnʾ*, "[before Yēš]ūaʿ son of Sanballat (and) Ḥanan the prefect."

Immediately upon purchase, the largest and best preserved of the papyri was prepared for opening. After photographs of the intact papyrus roll had been taken, the cords of its seven seals were slit, and the exacting task of unrolling was begun. Papyrus 1 proved to contain twelve lines of bold Aramaic script (see Pl. 59). Contrary to our expectation the papyrus was poorly preserved. A substantial part of the left side of the document was missing, probably because it was unprotected by sealings or the tough fibre strings binding the rolled papyrus in its sealings. The papyrus records the sale of the slave Yehōḥanan son of Šĕʾīlah to a certain Yehōnūr, a man who figures several times in the papyri, by Hananiah for the price of thirty-five pieces of silver (shekels). It is of note that all three principals bear Yahwistic names.

The most important datum in Papyrus 1 is its double date formula. The first line of the papyrus begins: *b20 lʾdr šnt 2 rʾš mlkwt [d]ryhwš mlkʾ bšmry[n mdyntʾ . . .]* "on the twentieth day of Adar, year 2 (the same being) the accession year of Darius the king, in the province of Samaria . . ." Only one Achaemenid king died in the second year of his reign, Arses, who was slain by the infamous eunuch Bagoas, and succeeded by Darius III (Codomannus). Thus the papyrus was written on March 19, 335 B.C.[12]

As other documents were opened, new date formulae appeared. Several documents are from the early reign of Artaxerxes III (Ochus, 358-338 B.C.), including Papyrus 8 written on March 4, 354 B.C., "before [Ha]naniah governor of Samaria." The earliest dated piece belongs between the thirtieth and fortieth year of Artaxerxes II (Mnemon), that is, between 375 and 365 B.C.[13] Thus the range of dates extends from about 375 B.C. down to 335 B.C. or slightly later, some forty years. The range covers one of the darkest eras in the history of Palestine.

The first systematic examination of the contents of the Dâliyeh documents was undertaken on my return to Jerusalem at the end of July, 1963. In the interval, however, a papyrologist was able to begin work on the fragments. Thanks to the aid of the British Academy, the Rev. J. W. B. Barns came to Jerusalem to use his great skills in putting together the dilapidated lot. While unacquainted with the script and language of the papyri, he accomplished miracles in reconstruction by analysis of fibre patterns and by study of destruction patterns.

On August 7, 1963, a new, small lot of fragments and sealings was purchased from the middleman of the Taʿâmireh tribesmen. It is by no means certain how many papyri were left in the cave by the fugitives who died in the cave of the Wâdī ed-Dâliyeh. Perhaps twenty pieces are worthy of being numbered as "papyri." There remain literally hundreds of small fragments, few of which can be joined to each other or to the larger papyri. The original deposit may have been in excess of a hundred documents. The primary destructive agent seems to have been worms rather than rot. Many of the rolled documents were devoured through, leaving patterns like paper dolls when the papyri were opened. One is forced to the grisly speculation that the worms which multiplied in the heaped corpses of the dead also attacked the papyri.

One hundred and twenty-eight clay seal impressions (bullae) have been recovered from all sources including excavation. In addition, there are two gold signet rings, both in good condition. About seventy of the bullae are in a good state of preservation, unbroken and unblurred. Two of the seals, one the governor's seal, were inscribed, both in Palaeo-Hebrew script. Usually, the seals contain either Attic motifs in the contemporary Greek style or Persian mythic and royal motifs. A very few belong to the so-called Greco-Persian style. The sealings in the Greek style impress one with the vivacity of Greek influence on Samaria in the era before the coming of Alexander. (See Pls. 62 and 63 and the final section of this chapter, as well as Pl. 36:1-4 and Pl. 100a for the sealings found in the excavation.)

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[12] Apparently this document is the first contemporary witness to the two-year reign of Arses, or for that matter, to the accession year of Darius III. Cf. R. A. Parker and W. H. Dubberstein, *Babylonian Chronology 626 B. C.-A. D. 75* (Providence, 1956), pp. 19, 35 f.

[13] This is Papyrus 21. It is very fragmentary, but preserves the symbols *20. 10*; only units could have followed, and the reign must be that of Artaxerxes II.

The content of all the papyri is legal or administrative. Wherever opening or closing date formulae are preserved we are told that the document was written in the province and/or the city of Samaria, and often that it was executed before the governor or prefect. Some of the documents are linked by the persons who were parties to the contract. A certain Yehōnūr appears in three documents, Neṭīrā' son of Yĕhōpadanī in four. The names which appear in the papyri are most often Yahwistic when they contain a theophoric element, but there is also a sizable number of foreign names reflecting the mixed character of the Samaritan population. Among the latter are names with the divine element: *Qôs* (Edomite), *Kĕmoš* (Moabite), *Ba'l* (Canaanite), *Nabū* (Babylonian), and *Śahar* (Aramaic). There is an unusually high number of slave documents, suggesting that their owners were men of means. There are also contracts of types well-known from Elephantine having to do with loans, sales of property, and marriage.

The new papyri will provide important new material for the description of social institutions in Persian Palestine, for studies in the history of law, and for description of the linguistic and orthographic evolution of Aramaic in the West. But discussion of these topics must await another occasion.

Tatters of historical data will be dredged from the papyri. The appearance of a Sanballat who flourished in Samaria in the first half of the fourth century gives an unexpected answer to a question debated for generations by students of the history of the Jews and Samaritans in the postexilic era. Sanballat of Beth Horon[14] is well known as the devious and malicious enemy of Nehemiah. He is mentioned frequently in the memoirs of Nehemiah, and once in a papyrus from Elephantine in upper Egypt. He was governor of the province of Samaria in 445 B.C., when Nehemiah arrived in Zion, and by 410 B.C. was an aged man, whose son Delaiah acted in his name. Sanballat gained notoriety in the Bible for his opposition to the restoration of the walls of Jerusalem, and for conspiring against the life of Nehemiah, in league with Tobiah, the Jewish governor of Amman, and Gashmu (Geshem), king of the Qedarite league, whose territory extended from northern Arabia into southern Palestine.

Nehemiah prevailed, of course, proving as wily as he was pious. He fortified the city, increased its population, and completed his first tour of duty as governor in 433 B.C. After a sojourn of indeterminate length, he returned to the Holy City. At the close of his memoirs, recounting the details of his reforms in Judah, he relates a last episode in which Sanballat plays a role. Nehemiah discovered that the son of Joiada the Zadokite high priest and the daughter of Sanballat the Horonite had been joined in a diplomatic marriage uniting the two great families of Judah and Samaria.[15] Nehemiah in righteous indignation chased the young man out of Jerusalem. Unhappily, we do not know his name. According to Josephus, however, after Johanan, son of Joiada, became high priest, he killed his brother Jesus in the temple. So dreadful was the event that Bagoas, the Persian governor of Judah, a successor to Nehemiah, entered the temple by force, defiling it, and imposed a heavy tribute on the Jews for seven years.[16] Jesus evidently had been laying claim to the high-priesthood with the aid of Bagoas. It would not be surprising if Jesus were the elder brother, son-in-law of Sanballat, who had proper claims to the diadem.[17]

In the *Antiquities*, Josephus tells a similar story with similar names, but the plot is played out in the era of Darius III and Alexander the Great. Sanballat, appointed governor of Samaria by Darius III, arranged a marriage between his daughter Nikaso and a certain Manasseh identified as the brother of Johanan the high priest. Manasseh was expelled from the altar, and retired to Samaria. This was the occasion, according to Josephus, for the building of the Samaritan temple on Mount Gerizim. Sanballat set up his son-in-law in business, so to speak, providing him with his own temple. According to the tradition received by Josephus, Alexander the Great commissioned its building on his arrival in Palestine in 332 B.C.[18]

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[14] The gentilic "Horonite" is best explained as derived from *Bêt Ḥôrôn.*

[15] Neh. 13:28.

[16] *Antiq.* xi. 297-301. This event probably must be dated before 404 B.C., since according to Neh. 12:22 Jaddua I (see below) came to the throne during the reign of Darius (II). Josephus identifies him as the *stratēgos* of Artaxerxes,, presumably confusing him with the notorious eunuch of Artaxerxes III.

[17] Cf. N. H. Snaith, *Studies in the Psalter* (London, 1934), pp. 13-14; H. H. Rowley, "Sanballat and the Samaritan Temple," *BJRL*, XXXVIII (1955), pp. 184 f.

In the past, scholars viewing these two similar accounts were incredulous. Cowley's sentiment was typical: "The view that there were two Sanballats, each governor of Samaria, and each with a daughter who married a brother of a High Priest at Jerusalem is a solution too desperate to be entertained."[19] Many historical constructions were attempted to provide a solution. Most saw the account of Josephus as a secondary reflex of biblical Sanballat and the intermarriage of the fifth century. A few gave credence to an Alexandrine date for the founding of the Samaritan temple. In a bizarre attempt to salvage Josephus' reputation as a historian, C. C. Torrey moved Nehemiah down into the fourth century, claiming that the Sanballat of Samaria mentioned in the Elephantine Papyri was the grandfather of Sanballat the Horonite, enemy of Nehemiah and father of two (!) marriageable daughters.[20] Some scholars even moved the building of the temple on Gerizim back into the fifth century, despite the silence of the Chronicler on the question of a separate Samaritan cultus.[21]

Unless I am mistaken, no scholar has proposed the existence of a Sanballat who flourished in the first half of the fourth century, after Sanballat the Horonite was dead, before the day of the Sanballat of Josephus' account, laid in the reign of Darius III (335-300 B.C.). However, once the existence of a second Sanballat, father of governors of Samaria, is firmly established, paradoxically it becomes far easier to accept a third Sanballat in the age of Alexander. That is to say, with the appearance of Sanballat II in the Dâliyeh papyri, most if not all objections to a Sanballat III melt away. The point is this. We know well that it was a regular practice in the Achaemenid empire for high offices, that of satrap or governor, to become hereditary. It is evident that the descendants of Sanballat held the governorship of Samaria for several generations, as did the line of Tobiah in Ammon. Moreover, we know that the practice of papponymy (naming a child for its grandfather) was much in vogue among the Jews and surrounding nations precisely in this era.[22] One may refer to the dynasty of Tobiah, where papponymy is documented for about nine generations.[23] The high priests of Judah in the Hellenistic era present almost as striking a picture: The names Onias and Simon alternate over five generations.

We can reconstruct with some plausibility, therefore, the sequence of governors of Samaria in the fifth and fourth centuries. Sanballat the Horonite is evidently the founder of the line, to judge by the fact that he bears a gentilic, not a patronymic. He was a Yahwist, giving good Yahwistic names to his sons Delaiah and Shelemiah. Sanballat I must have been a mature man to gain the governorship, and in 445 B.C., when Nehemiah arrived, no doubt was already in his middle years. His son Delaiah acted for his aged father as early as 410 B.C. The grandson of Sanballat, Sanballat II, evidently inherited the governorship early in the fourth century, to be succeeded by an elder son (Yêshūaʿ ?), and later by his son Hananiah. Hananiah was governor by 353 B.C., and his son, or his brother's son, Sanballat III, succeeded to the governorship in the time of Darius III and Alexander the Great.[24]

Josephus is not wholly vindicated. It is clear that he indentified biblical Sanballat and Sanballat III, jumping from the fifth to the late fourth century. Moreover, it is highly likely that a similar haplography occurred in Josephus' sources for the sequence of Zadokite high priests. From the Elephantine letters we know that Bagoas had become governor and that Johanan, son of Joiada, had taken the high priestly office no later than 410 B.C. Nehemiah furnishes us with the name of his son Jaddua, a caritative form of his grandfather's name, Joiada. Unless the name of Darius in Neh. 12:10, 22 is the addition of a late editor, we must suppose that Jaddua took priestly office before 404 B.C.[25] It is hardly conceivable, therefore, that he exercised the priestly office until 332 B.C., much less that he had a brother of marriageable age in that year, as we should have to affirm if biblical Jaddua is identified with Jaddua the high priest whose brother married Nikaso, daughter of Sanballat III. It seems highly probable that we must insert a Johanan (?) and a Jaddua III in the series of high priests.[26]

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[18] *Antiq.* xi. 302-312; 321-325.

[19] A. Cowley, *Aramaic Papyri of the Fifth Century B.C.* (Oxford, 1923), p. 110 (quoted by Rowley, *op. cit.*, p. 173, n. 1).

[20] See, for example, his discussion in *The Second Isaiah* (New York, 1928), pp. 456-460, and references there.

[21] For detailed bibliographical references, see Rowley, *op. cit., passim.*

[22] Cf. W. F. Albright, "Dedan," *Geschichte und Altes Testament*, ed. G. Ebeling (Tübingen, 1953), p. 6, n. 3.

[23] On papponymy in the house of Tobiah, see B. Mazar, "The Tobiads," *IEJ*, VII (1957), pp. 137-145, 229-238 and, especially, p. 235 and n. 73.

[24] This is not counter to probabilities. Sanballat I no doubt died ripe in years, his eldest already advanced in age. This construction is, of course, hypothetical. Our evidence is tantalizingly limited.

What, then, are we to say about the marriage of the son of Joiada to a daughter of Sanballat I, and the marriage of the brother of Jaddua to the daughter of Sanballat III? Certainly we can no longer look at the episode with the same historical scepticism. After all, the names and relationships are by no means identical. It appears that the noble houses of Samaria and Jerusalem were willing to intermarry despite the ire of certain strict Jews, presumably the progeny of the reforms of Nehemiah and Ezra.

In the past it has been difficult to reckon with the possibility of repeated intermarriage between the aristocracy of Samaria and the theocratic family of Jerusalem. We are inclined to read back into the era of Nehemiah and Ezra the extreme alienation, indeed the hatred, which marked the relationship of Jews and Samaritans in Roman times, and to attribute to Ezra the developed legal tradition related to the Kūtîm in Rabbinic sources. There has been mounting evidence, however, that the schism which separated the Samaritans finally, and irreversibly, from their Jewish coreligionists came much later, long after the end of Persian rule. For one thing, it is evident that the religion of Samaria derived from Judaism. Its feasts and law, conservatism toward Torah and theological development show few survivals from the old Israelite religion as distinct from Judean religion, and no real evidence of religious syncretism. Even the late Jewish apocalyptic has left a firm imprint on Samaritanism.[27] For this and other reasons, scholars have increasingly been inclined to lower the Samaritan schism into the last half of the fourth century, and some would discover the occasion of the radical break of Jews and Samaritans as falling precisely in the era of Alexander the Great.

There can be little doubt that the erection of the temple on Gerizim as a rival to Zerubbabel's temple in Jerusalem further aggravated the traditional bad relations between Samaritan and Jew. It need not, however, be regarded as the final event leading to total estrangement. Curious to say, the Hellenistic era added at least three, perhaps four, rival cults to that of Jerusalem. In the second century B.C. Onias IV, pretender to the Zadokite priesthood, built a temple in Leontopolis in Egypt.[28] At the beginning of the second century, Hyrcanus of the family of Tobiah built a temple in ʿArâq el-Emîr in Trans-Jordan.[29] If Josephus is correct, the Essenes conducted a sacrificial cultus by the Dead Sea.[30]

It is difficult to speak of the Samaritans as a fully separated sect, so long as direct Jewish influence shaped their doctrine and practice, so long as the biblical text which they used was held in common with the Jews, so long as Jew and Samaritan used a common national style of script. In other terms, when do Samaritan and Jewish theology and discipline begin separate, increasingly diverging lines of development? When does the textual tradition of the Samaritan Pentateuch branch from the textual tradition established in Jerusalem? When does the Samaritan script begin to evolve in its distinctive path?

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[25] See above, n. 16; see also W. F. Albright, *The Biblical Period* (Pittsburgh, 1950), p. 54.

[26] Counting Joiada as I. Cf. P. W. Lapp, "Ptolemaic Stamped Handles from Judah," *BASOR*, No. 172 (Dec., 1963), p. 33, n. 54.

[27] See E. Bickerman, *From Ezra to the Last of the Maccabees* (New York, 1962), pp. 42-43, who observes that in the Persian period the conflicts between Samaria and Jerusalem were largely political, rather than religious.

[28] Josephus *BJ* i. 31, 33; vii. 422-435.

[29] See P. W. Lapp, "The Second and Third Campaigns at ʿArâq el-Emîr," *BASOR*, No. 171 (Oct., 1963), pp. 8-38; and "The Qaṣr el-ʿAbd: A Proposed Reconstruction," *ibid.*, pp. 39-45.

[30] On a possible sacrificial cult at Qumrân, see F. M. Cross, Jr., *The Ancient Library of Qumrân*, 2nd ed. (New York [Anchor Books], 1961), pp. 100-106.

In 1940, W. F. Albright wrote as follows: "If we compare the oldest lapidary examples of Samaritan writing with the coins of the Hasmonaeans . . ., dated between 135 and 37 B.C., a relatively late date for the origin of the Samaritan script as such seems highly probable. Morever, since Shechem and Samaria were conquered by the Jews between 129 and 110 B.C, and were lost to the Romans in 63 B.C., it would only be natural to date the final schism between the sects somewhere in the early first century B.C.[31]

With the discovery of the Qumrân scrolls, especially the hundred or more biblical rolls from Cave 4, Albright's position was confirmed in principle. The writer drew on a number of new lines of evidence which appear to establish firmly that the Samaritan Pentateuch, its textual type, orthographic style, Palaeo-Hebrew script, and linguistic usage, all developed in the Maccabaean and early Hasmonean periods.[32] Recently two of my students have developed in detail these and other positions relating to the Samaritan Pentateuch in Harvard dissertations: Bruce K. Waltke, *Prolegomena to the Samaritan Pentateuch* (1965); and James D. Purvis, *The Samaritan Pentateuch and the Origin of the Samaritan Sect*, Harvard Semitic Monographs II (Cambridge, 1968).

We can now place the Samaritan Pentateuch in the history of the Hebrew biblical text.[33] It stems from an old Palestinian tradition which had begun to develop distinctive traits as early as the time of the Chronicler, and which can be traced in Jewish works and in the manuscripts of Qumrân as late as the first century of the Christian era. This tradition was set aside in the course of the first century in Jerusalem in favor of a tradition of wholly different origin (presumably from Babylon), which provided the base of the Massoretic recension. The Samaritan Pentateuchal tradition breaks off very late in the development of the Palestinian text. Early exemplars of this tradition lack most of the long additions from synoptic passages, and exhibit stronger affinities with the Egyptian textual tradition, which broke off and began its separate development much earlier than the Samaritan. The Samaritan text-type thus is a late and full exemplar of the common Palestinian tradition, in use both in Jerusalem and Samaria.

The Palestinian textual tradition of the Pentateuch sometimes comes in special dress. Often at Qumrân it is inscribed in the Palaeo-Hebrew script. This script is now known from seals of the fourth century from Samaria (found in the Wâdī ed-Dâliyeh), an unpublished seal from Makmish,[34] and, from late in the century, from the so-called Hezekiah coin.[35] It is frequently used in the official jar stamps of the third century B.C. from Judah, both in stamps inscribed with *Yehūd plus symbol*[36] and in the pentagram stamps bearing the legend *Jerusalem*.[37] In the second and first centuries B.C., this old national script is well known from published and unpublished manuscripts from Qumrân as well as from Hasmonaean coins. It is now possible to date roughly the periods in the typological sequence of the Palaeo-Hebrew scripts.[38]

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[31] *From the Stone Age to Christianity*, 2nd ed. (Baltimore, 1946), p. 336, n. 12. Cf. *BASOR*, No. 140 (Dec., 1955), p. 33, n. 29, and *BASOR*, No. 81 (Feb., 1941), p. 51 .

[32] On the textual and palaeographical aspects of "Proto-Samaritan" texts from Qumrân, see my early comments in *BASOR*, No. 141 (Feb., 1956), p. 12, n. 5a; *The Ancient Library of Qumrân*, pp. 172 f; "Development of the Jewish Scripts," *BANE*, p. 189, n.4.

[33] See provisionally the writer's paper, "The History of the Biblical Text . . .," *HTR*, LVII (1964), pp. 281-299, and "The Contribution of the Discoveries at Qumrân to the Study of the Biblical Text," *IEJ*, XVI (1966), pp. 81-95.

[34] My knowledge of this seal is thanks to Professor Nahman Avigad, who will publish it. Its script shows a number of special traits in common with the Samaritan seals.

[35] Published by O. R. Sellers, *The Citadel of Beth-zur* (Philadelphia, 1933), pp. 73 f.

[36] See most recently P. W. Lapp, "Ptolemaic Stamped Handles from Judah," *BASOR*, No. 172 (Dec., 1963), pp. 22-35.

[37] J. S. Holladay, in a letter dated December 2, 1965, has called my attention to stamps on wine-jars of the Greek islands, notably Thasos, which bear the pentagram and evidently influenced Jewish potters.

[38] R. S. Hanson, "Paleo-Hebrew Scripts in the Hasmonaean Age," BULLETIN, No. 175 (Oct., 1964), pp. 26-

In this sequence of scripts, it is evident that the ancestral Samaritan character branches off from the Palaeo-Hebrew script in the course of the first century B.C. There is no question of pushing the date higher. It may be noted that the Palaeo-Hebrew script is used only in copying Palestinian texts. Texts of other traditions never are copied in the script; on the other hand, Palestinian texts of the Pentateuch are also inscribed in the ordinary Jewish character.

A similar typology can be drawn in the development of spelling practices. The earliest Palestinian texts follow a highly defective mode of orthography. In the course of the early second century a special "Maccabean" spelling system emerged, which expands the use of vowel letters, sometimes in a startling fashion. This baroque (hyper-plene) style of spelling, in a relatively restrained mode well known in late manuscripts from Qumrân, characterized the Samaritan Pentateuch.[39]

The language of the Samaritan Pentateuch also includes archaizing forms and pseudo-archaic forms which surely point to the post-Maccabean age for its date.

From whatever side we examine the Samaritan Pentateuch, by whatever typological development we measure it, we are forced to the Hasmonean period at earliest for the origins of the Samaritan recension of the Pentateuch.

This evidence suggests strongly that the definitive breach between the Jews and Samaritans must be sought in the special events of the Hasmonean era, before the Roman period when Jew and Samaritan looked upon each other in loathing, or as corrupters of the faith.

Once again we may look to the excavations at Shechem. This site yields evidence which, correlated with texts from Josephus, provides a convincing setting. In 128 B.C. John Hyrcanus laid waste to the temple of Mt. Gerizim and imposed Judean Judaism, so to speak, on the Samaritans; on the same campaign, he went so far as to circumcize by force the Idumeans living to the south of Judah. It is clear that his goal was to establish orthodoxy in the realm which once made up Israel. In 107 B.C. Hyrcanus again stormed north, destroying Samaria and probably Shechem as well.[40] Hyrcanus' attempt to extirpate the Samaritan cultus failed as signally as Spanish attempts to baptize Jews in another age. When Pompey in 64 B.C. freed Samaria from vassalage to the Hasmonean priest-kings, we may be sure the Samaritans severed all ties with Judaism, to traverse their own isolated and involuted path.

This reconstruction of the history of the Samaritans solves many problems which have perplexed us in the past. As we have suggested, it dissolves the mystery of the specifically Jewish character of Samaritanism. It explains the close ties of Samaritanism to Zadokite traditions, and provides the background of Essene or apocalyptic Zadokite strains in late Samaritan law and doctrine. The historian is no longer required to contend with a parallel, but unrelated, evolution within two sects over a half millennium after their separation.

Similarly, the new construction of the history of the Samaritans clears up confusion concerning the history of the text of the Pentateuch. In the distorted picture of this development still being defended in most circles, we were required to suppose that the Samaritan Pentateuch branched off as early as the fifth century, yet preserved a text exceedingly like the *textus receptus* of the Roman age, indeed a secondary or inferior form of the received text. The Greek version, branching off about the same time or slightly later, on the other hand, preserved a remarkably variant tradition, sometimes superior, sometimes inferior to the Rabbinic text of the first century of the common era. The Greek tradition conforms to all analogies in the transmission of ancient texts. The development of the Samaritan seemed at all points anomalous. These anomalies now disappear, with the happy result that the critic's task is greatly facilitated.

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42. With the publication of the full lot of Cave IV manuscripts, more precision in dating these Qumrân hands will become possible.

[39] On the orthography of Palestinian texts, see the writer's paper in *IEJ*, XVI (note 33 above), and D. N. Freedman, "The Massoretic Text and the Qumrân Scrolls: a Study in Orthography," *Textus, II* (1962), pp. 87-103.

[40] See E. F. Campbell in Lawrence Toombs and G. Ernest Wright, "The Third Campaign at Balâṭah (Shechem)," *BASOR*, No. 161 (Feb., 1961), p. 47, and G. E. Wright, "The Samaritans at Shechem," *HTR*, LV (1962), pp. 358-359.

Fragments of Papyri found in the Excavations of the American School of Oriental Research[41]

Fragment a (WD I.3 #27 and WD I.3 #28, Jan. 11 and 14, 1963; Pl. 60: a.).

[ש |̊|̊|̊ |̊|̊]
[ו̇זרתא והלכ̇א]
[זך]

1.]sh (eqels) 5[
2.]and the span and beyond[
3.]that[

Notes to text:

l. 2 The *he* is archaic as are most of the letters. *lamed* (medial) has the cursive, developed form.

l. 3 The relative and demonstrative particles are normally written with *zayin* in these papyri as at Elephantine. The appearance of an occasional writing with *dalet* suggests that the *zayin* is historical spelling for the old voiced interdental stop, but spelling with *dalet* is as rare as at Elephantine.

Fragments b (WD I.3 #26, Jan. 9, 1963; Pl. 60: b)

1. [לקבל̊]
2. [◦ ל̊]

Fragment c (WD I.3 #29, Jan. 17, 1963; Pl. 60: c)

1. [ ]
2. [רי להולכ]
3. [ ]

Fragment d (WD #33, Feb. 12, 1964; Pl. 60 right)

1. [ש̊נת ד ||| |̊]
2. [זי על ◦]
3. [מנד אנת מנד̇]
4. ‸י [נתן לך כס̊ף̊]
5. [ק̊בל ורעה]
6. [ישם להנש צ̇]

1.]year fourteen[
2.]who entered[
3.]MND Thou MND[
4.]he will give thee silver[
5.]*received and he was pleased*[
6.]*determined* (?) to exact the loan[

Notes to text:

l. 1 The *šin* is not certain. Ink is smeared here. *mêm* also could be read, "portion." In that case, however, we should expect the sign for sheqels or minas or the like before the number. Year 14 would date the papyrus in 345 B.C.

l. 2 The *lamed* is a final form (i. e., archaic and unhooked) over against medial, hooked forms in ll. 4 and 6. The same phenomenon is found in fourth-century Egypt and at Qumrân in the Old Samuel (4QSam^b).

l. 3 The repetition of the pronoun with a personal name is frequent.

l. 4 A frequent formula in loan agreements.

l. 5 The context is not sufficient to determine the meaning with any assurance.

l. 6 In Egyptian Aramaic *ršy* (Akk. *rašû*) is used. However, *nš'* is a loanword in Hebrew from Aramaic, so that probably it was at home in some Western dialects.

The script of Fragment d comes from a skilled hand. In typology it falls between the scripts of the two papyri used in Pl. 59. *Alef* is developed; *dalet* has a narrow head, a trait developing after ca. 350 B.C. *Waw* is just reaching the stage where it can be confused with *reš*. *Kaf* is shortening and strongly curved at the bottom. Medial *lamed* is hooked, a feature which is rare in elegant hands before 350 B.C. *'ayin* appears twice, neither time breaking below on the right. This is a feature established in the latest papyri from the Wâdī ed-Dâliyeh (in the 330's). The right leg of *taw* is lengthening. The date of the script tends to confirm the reading in line 1, placing the papyrus in the thirteenth or fourteenth year of Artaxerxes III (Ochos), 346/345 B.C.

The Scripts of the Dâliyeh Papyri

The papyri from the Wâdī ed-Dâliyeh are of special importance for the discipline of Aramaic palaeography. They provide the first set of absolute dates for the fourth-century Aramaic cursive,[42] spanning the years ca. 375 to 335 B.C., and are the first papyri of the fourth century to be found in Palestine. These scripts of fixed date will aid in giving new precision to the typological sequence dating now established for the modest corpus of ostraca from Palestine and ostraca and papyri from Egypt dating from this period.[43] The dated sequence from Wâdī ed-Dâliyeh will be equally important for the scripts of the third century B.C., both those of ostraca and papyri from Egypt, and those of the earliest manuscripts from Qumrân. Unhappily, the three papyri and handful of ostraca in cursive Aramaic from Egypt all belong to a vulgar cursive tradition. Only one of the Qumrân hands, 4Q Exodus^{f},[44] belongs to the cursive tradition.[45] The other two third-century manuscripts from Qumrân, 4QSamuel^{b} and 4QJeremiah^{a}, were inscribed in a highly formal hand without prototype in Egyptian scripts of the second half of the fourth century or of the third century. Since the Jewish formal script of the Hasmonean and Herodian ages descended from scripts of the type of the 4QSamuel^{b} and 4QJeremiah^{a} manuscripts, this lacuna in the typological series has been most frustrating. In 1961 the writer stated that the prototype of the earliest formal bookhands of Qumrân would prove to be the chancellery hand in use at the end of the Persian Empire, and that the proto-Jewish book hand was little influenced by third-century vulgar cursive developments.[46] Papyrus 1 from 335 B.C. proves to be such a prototype. As a matter of fact, the script of Papyrus 1 is slightly more developed than I had anticipated, with certain features *more advanced* than in the third-century vulgar cursives![47] This fact has immediate implications for the chronology of the earliest Qumrân manuscripts: the dating proposed by the writer for the archaic Samuel manuscript (ca. 225 B.C.) now appears to be minimal. The chronology of the Archaic Period (pre-Hasmonean) of the Jewish national scripts may prove too low by a generation. It is clear also that the so-called Hasmonean hands of Qumrân cannot be reduced in date, but are now fixed.

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[41] The main lot of papyri and fragments of papyri bought from Kando will be published separately by F. M. Cross, Jr.

[42] Ignoring P. Sachau 18 and 35 of 400 B.C., and P. Brooklyn 13 from 399 B.C. Cf. F. M. Cross, "The Development of the Jewish Scripts," *BANE*. p. 140 and esp. n. 34.

The scripts of Papyrus 1 (335 B.C.) and Papyrus 2 (dating from 352/351 B.C.), used in the chart of scripts, will be compared with P. Sachau 18, the most advanced of the Elephantine scripts from 400 B.C.,[48] the P. Luparensis of the first half of the fourth century B.C., and 4QSamuel^{b} (hereafter 4QSam^{b}) from ca. 250 B.C.[49] Certain general characteristics may be noted first. The elongated letter forms, extending above the ceiling line and especially below a theoretical baseline, continued unmodified throughout the Dâliyeh series, unaffected by contemporary cursive impulses to increase the regularity or monotony of letter size. Similarly the Dâliyeh scripts retain the formal trait of shading but not so elegantly as Elephantine. The tradition is preserved but perhaps is in the first stages of decay.

Certain major shifts of letter form fall into the interval 350-335 B.C. *Lamed* in the latest Dâliyeh manuscripts systematically has a neat, narrow, hooked form. This form is only sporadic earlier. Moreover, a tendency to use an archaizing form, broad, only slightly hooked, as a *final* form of *lamed* may be discerned both in late Dâliyeh manuscripts and at Qumrân.[50] In the latest of the Dâliyeh hands, the distinction between medial and final *mêm* also is fully formed, to persist in the formal hand. The left diagonal of the medial *mêm* curls upward in a "semi-ligature," and rarely breaks through above the upper horizontal. This latter trait appears regularly first in P. Luparensis, but is absent in the early group of Dâliyeh documents. The older form with the diagonal breaking through from well above the horizonal is preserved in final forms, and, interestingly enough, in both medial and final position in third-century and even second-century cursives.[51] A simplified *samek* appears at Dâliyeh in anticipation of both formal and cursive developments of the third century B.C. *'Ayin*, fully broken through on the right to form a "*y*." appears regularly in the latest Dâliyeh papyri, but not in those earlier than ca. 340 B.C. This *'ayin* is the ancestor of the third century Qumrân formal *'ayin*'s. The "*U*" form *'ayin* persists in the third-century cursive, however, as the standard form.

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[43] The most recent detailed studies of fourth-century cursive Aramaic scripts are F. M. Cross, "The Oldest Manuscripts from Qumrân," *JBL*, LXXIV (1955), pp. 147-165; "The Development of the Jewish Scripts," *BANE*, pp. 133-202; N. Avigad. "The Palaeography of the Dead Sea Scrolls and Related Documents," *Aspects of the Dead Sea Scrolls, Scripta Hierosolymitana*, IV (Jerusalem, 1957). pp. 59-64; and Joseph Naveh, *The Development of the Aramaic Script* (Jerusalem, 1970), pp. 43-51. For an up-to-date list of items belonging to the fourth-century corpus, see Naveh, pp. 43-45.

[44] On the script of 4QExodus^{f} and its date see *BANE*, pp. 153-158 (Fig. 1, line 3).

[45] 4QExodus^{f} is a vulgar cursive script developed in a locality, presumably Palestine, where a set of archaic features survived, and a series of changes evolved, which were not altogether paralleled in the evolution of the fourth-century and third-century cursives in Egypt.

[46] *BANE*, p. 140 and esp. pp. 145-153.

[47] The *'ayin* with the right stroke projected well below the junction with the left curved stroke is the parade example.

[48] This date is precise; see n. 42.

[49] See the script charts of Naveh and the writer in the monographs listed in n. 43.

[50] *BANE*, p. 141 and note 52.

'Alep in P. 1 and P. 2 exhibits the crescent-shaped left leg characteristic of P. Luparensis, and surviving in 4QSam^b alone of the third-century scripts, cursive or formal.

In P. 1 and 6, *bêt* reveals a change in the right downstroke which tends from the diagonal more to the vertical in stance. The lower part begins to form a baseline, lengthening and thickening also to the left. This trait is well known in third-century cursives and in formal and cursive scripts of the third century at Qumrân.

Dalet and *rêš* after about 350 B.C. begin to narrow, i. e., the head decreases sharply in size. The heads of *dalet* and *rêš* are still sharply ticked at either end in the formal scripts. These traits reach their climax in 4QSam^b where *rêš* and *dalet* not only are confused with one another but also with *waw*. The third-century and second-century cursive does not exhibit this form.

The leftward-drawn cross-stroke of *hê* moves upward toward the horizontal and sometimes shortens beginning in the second half of the fourth century (P. 1 and 6). These traits continue into the early Qumrân scripts in their development in the third-century cursive, a form in which the crossbar is drawn from left to right, giving rise to a reversed "K" form. In second-century semi-cursives, the latter form becomes a medial, the former a final *hê*.

Gimel, *ḥêt* and *ṭêt* evolve in the fourth and third centuries. The Dâliyeh forms are standard. *Yôd* throughout the formal scripts in these two centuries is inscribed in the three-stroke form.

Medial *kaf* shortens abruptly and moves toward a vertical stance beginning about 350 B.C. and curls in "semi-ligature" at the base more sharply, increasing its distinction from the final form. The final form tends to move towards the vertical, but lengthens in opposition to the development of the medial form.

Lamed and *mêm* have been discussed above. We note here that the medial *mêm* of P. 2 is unusual in not having the left diagonal curve in semi-ligature. Contemporary Dâliyeh scripts (P. 8) exhibit this curve. Similarly *medial* forms, in which the break-through above the horizontal persists, continue into the latest papyri of Dâliyeh (P. 6).

The contrast between medial and final *nun*, rudimentary in Sachau P. 18 and P. Luparensis, becomes fully developed in all the Dâliyeh papyri. After ca. 350 B.C. the hook at the top of final *nun* tends to become smaller, and the curved base of the medial form coiled tighter. *Medial* forms with a vestigal hook at the top become increasingly rare at Dâliyeh as one moves later, but do persist to the end of the series.

The usual form of *ṣade* in the Dâliyeh texts is an archaic type which exhibits the right stroke moving downward from its intersection with the left downstroke.[52] It is not of significance in dating in the fourth and third centuries.

Qôf evolves little or not at all from about 400 B.C. to the forms in 4QSam^b.

Šin in the Dâliyeh scripts shows tendencies, especially in the later papyri, to give some curve to the right and middle downstroke. The trait persists in the cursive, but is of little aid in dating fourth and third century formal scripts. at Qumrân.

Taw evolves little between the end of the fifth century and the end of the Dâliyeh series. The gentle curve at the bottom of the left downstroke tends to tighten in the third-century formal texts, and the right downstroke begins to lengthen further, at the end of the third century at Qumrân.

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[51] *BANE*, Fig. 4, line 1.

[52] Cf. Naveh, *op. cit.*, p. 28, who gives drawings of the three forms current in the fifth and fourth centuries.

The Seals from the Dâliyeh Papyri (Pls. 62-63)

a. and b. Seal WD I.3 22A and B (double sealing).

This doubly-sealed bulla was the only legible one found in the excavations of Mughâret Abū Shinjeh. No. 22A is poorly preserved, but appears to be a representation of the Persian hero dressed in the *kidaris* and Persian garb. He stands facing to the right with dagger or scimitar (not preserved) drawn back in his right hand. The scene is probably drawn from the type found in Seal 4 (where parallels are listed). No. 22B has been badly smeared in sealing and poorly preserved. It seems to contain in a simple oval frame a female figure dressed in *chiton* and *himation*. The head is almost wholly gone. The drape of the *himation* across the breast is visible. The line of a wing may be seen on the right side, and the shoulder of the left wing is quite clear. Apparently it is a representation of Nikē. Compare G. Richter, *Catalogue of Engraved Gems: Greek, Etruscan, and Roman* (Rome, 1956), Pl. XI:69; and the parallels listed on p. 72.

c. Seal No. 4.

The Persian hero dressed in Persian *kidaris* and clothes holds an ox-horned, winged lion with his left hand. A scimitar is drawn back in his right hand. The scene is a popular one, found on the coins of Sidon (G. F. Hill, *Catalogue of the Greek Coins of Phoenicia* [London, 1910], Pl. XIX, 9-11, 13; Pl. XX, 5; XXI, 3; XVIII, 5, 7; it occurs frequently on seals: L. Legrain, *Seal Cylinders*, Ur Excavations, X [New York, 1951], Nos. 751-755; E. F. Schmidt, *Persepolis II* [Chicago, 1957], Pl. 3: 1, 11:37, 13: 59, 50; G. Richter, "The Late 'Achaemenian' or 'Greco-Persian' Gems." *Hesperia Supplement*, VIII [Shear Volume; 1949], Pl. 31: 3; etc. See also *Persepolis I*, Pls. 145 and 196; and Kemal Balkan, "Inscribed Bullae from Daskyleion," *Anatolia*, IV [1959], Pl. 33, 9, b).

d. Seal No. 14.

A nude youth is portrayed wearing the *chlamys* with a lance or *kērykeion* in the left hand, an *aphlaston* (ship's stern ornament) in his right hand. The seal may be compared with representations of Jason. For example, compare the fourth-century gem published by A. Furtwängler, *Die antiken Gemmen: Geschichte der Steinschneidekunst im klassischen Altertum* (Leipzig, 1900) [hereafter Furtwängler], Pl. XX, 26, showing Jason with lance in left hand, the *aphlaston* of the Argo to his right. Cf. Furtwängler, pl. XVIII, 4 (with inscription EASUN). G. Richter, *Catalogue*, Pl. XVI, 93, identified a nude youth as Hermes in view of a *kērykeion* held in the left hand. She failed to recognize the *aphlaston* on his right although the representation seems clear enough. Cf. Hill, *Phoenicia* p. cix and references, and Pl. XLII, 17, a Hellenistic coin of Sidon with a male figure wearing a *chiton* and *chlamys* over his left arm, and holding an *aphlaston* and cruciform standard in his right and left respectively. He stands in the prow of a ship.

Seal No. 14 was affixed to Papyrus 7 which is dated between 356 and 346 B.C.

e. Seal No. 25.

The seal shows two scorpion men facing one another. Each has lion forequarters, bird feet, and human head crowned with the royal Persian tiara, as well as the characteristic scorpion thorax and curled tail. The seal has a border of chain or twisted line decoration. Cf. E. Porada, *Corpus of Ancient Near Eastern Seals in North American Collections, I: The Collection of the Pierpont Morgan Library* (1948) [hereafter Porada], 841, showing scorpion men on either side of a censer; cf. Porada 784 and 801 (Neo-Babylonian).

f. Seal No. 17.

The king or hero wearing the *kidaris* and Persian dress holds in either hand at arms' length a twisting animal upside down. On the right is a lion; the animal on the left seems also to be a lion. The scene is a familiar one with many parallels including Seals 51 (below) and 36 from the Dâliyeh Papyri. Cf. *Persepolis* II, Pl. 3, seal 3 and Pl. 4, seal 6; Porada 824E, 825; Richter, *Catalogue*, Pl. IV, 22; Pl. V, 35 (Herakles with club holding a twisting lion); Richter, *Hesperia Supplement* VIII, Pl. 31, 1; and Furtwängler, Pl. I, 13, 14.

g. Seal No. 51.

This seal and No. 36 which is even more

badly blurred portray the same scene as No. 17 above. However, only the royal hero and a twisting lion in his outstretched left hand is preserved on the seal. The right hand stretches out beyond the edge of the sealing. For parallels, see f. above.

h. Seal 42.

Herakles, nude, with his club at lower left, is shown contending with a lion in a traditional motif. Seal 26 has a blurred representation of the same scene. Cf. Furtwängler, Pl. IX, 49; XVII, 56; LXI, 20; Richter, *Catalogue*, Pl. XII, 72, 76; and C. M. Kraay, *Greek Coins* (New York, 1966), Pl. 89:257, 258.

i. Seal No. 26.

Herakles, facing right, contends with a lion. The seal is identical virtually to Seal 42 (h. above).

k., l., m., and n. Seals 3A, 10A, 11B, 12, and 24

Seal 11B was attached to Papyrus 1; it is identical to Seal 3A (attached to Papyrus 10), and to Seals 12, 10A and 24. Probably it is the seal of Yĕhōnūr mentioned in Papyri 1, 6 and 10.

The royal hero in Persian dress holds a sphinx with his right hand, a scimitar drawn back to strike in his left hand. A sphinx stands on either side of the hero, in balance. They are winged human-headed lions. The sphinxes' heads are male, bearded and wear the tiara. They stand on all fours. The scene may be compared with Seal 4 (above c.) and its parallels. See also Legrain, No. 757; Porada, 819-823; and Balkan, Pl. 33, c, d.

o. Seal No. 46.

The seal portrays the traditional scene of a quadriga driven by Athena. Cf. Furtwängler, Pl. IX, 10; X, 6; XIX, 46; Kraay, Nos. 114, 348; and *Persepolis II*, Pl. 12, seal 45.

Chapter IV

THE LATE PERSIAN POTTERY

Nancy Lapp

The Ta'âmireh who opened Cave I in the Wâdī ed-Dâliyeh describe finding about thirty skeletons lying at the back of the cave, covered by cloth. The papyri were found in positions indicating that they had been attached to their persons. The bedouin did not mention the pottery vessels that were with them. But the sherds found in the excavations were recently broken and indicate without doubt that the Ta'âmireh shattered whole vessels in their search for papyri, thinking there might be manuscripts inside the jars as had been the case at Qumrân.

Almost all the pottery recovered during excavation of Cave I showed new clean breaks. Most sherds were of a size easily held in the palm of a hand. The Ta'âmireh broke up the vessels and in the process of looking for papyri scattered the pieces far and wide. Though records were carefully kept by the subsequent excavators and the find-spot of each sherd is known, all the debris the Ta'âmireh had examined first showed no stratification, having been thoroughly mixed. Sherds of the same vessel were found in widely scattered areas of the cave, sometimes in different campaigns. Most of the sherds, however, were from the manuscript find area (I.3).

Reconstruction showed that the number of vessels and the repertory of types were very limited. The Samaritan refugees must have carried with them only those vessels necessary for provisions and a little cooking. A few uneaten olives and figs hint that some of the jars may have contained these. Most of the vessels were large storage jars which would have been difficult to carry into the wadi. They are heavy in themselves, and if they contained food or water the transport problem must have been considerable. However, they undoubtedly either carried water in the jars or used them to store water which had been brought into the wadi in skins, much like the practice of the Dâliyeh excavation teams and their bedouin workers.

Study and reconstruction of the pottery make it possible to estimate with fair certainty the number of vessels the refugees must have had. From most of the sherds complete forms can be reconstructed and almost all vessels can be characterized as to their rims, handles, and bases. There were probably fifteen or sixteen separate storage jars, three smaller, less typical jars, perhaps no more than four jugs, and probably seven or eight juglets. Sherds from which could be reconstructed one mortarium and two cooking pots were found. About thirty-five vessels are thus indicated.

No pottery of this period which can be so closely dated by independent evidence has yet been published.[1] Although the repertory of forms is limited, the Wâdī ed-Dâliyeh presents a closely dated pottery group just at the turn of the Persian to the Hellenistic period. The coins and papyri, as well as the historical situation, indicate that this is the pottery in use about 331 B.C.[2] Sites with occupation about this time have comparable pottery, and the Dâliyeh material offers help in assigning absolute dates to material from other sites. Recently excavated stratified pottery from Samaria has been dated to the first half of the third century B.C.,[3] and the relationship to the Wâdī ed-Dâliyeh group is evident. Cistern 7 Strip 1 of the Harvard Excavation at Samaria presents some of the closest parallel forms.[4] Stratum IV at Balâṭah can be dated just after the Dâliyeh material.[5] Comparable published vessels from other sites will be noted in the discussion of types below.

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[1] Note, however, the preliminary publication of some of this pottery by P. W. Lapp in *Galling*, pp. 179-197.

[2] For the dating of the coins see pp. 57-58, the papyri, pp. 18-24, and the historical setting, pp. 17-18.

[3] F. Zayadin, "Early Hellenistic Pottery," *ADAJ*, XI (1966), pp. 53-54.

[4] See *HES I*, p. 62, for a discussion of the probable date of the cistern.

STORAGE JARS (Pls. 18-20 and 72-74, 76)

All the storage jars were of large cylindrical shape with the usual Hellenistic rounded bases and rounded rims typical of the Early Hellenistic period. Pl. 19: 1 is probably the most typical, other rims showing slight variations.

The whole repertory of rounded rims is quite similar to that of Layer V of the theatre excavations at Samaria in 1965 (dated to the first half of the third century B.C.)[6] and of Stratum IV at Balâṭah,[7] dated 325-250 B.C. It may be noted that unpublished jar rims from En-Gedi are the immediate predecessors to Wâdī ed-Dâliyeh.[8] The rounded rims are typically Early Hellenistic, but are less common and more varied in Late Hellenistic times and have disappeared by the first century B.C.[9]

The rim of Pl. 19: 3 approaches a variant that was common in Stratum IV at Balâṭah.[10] It exhibits an undercut at the bottom of the rim and in some cases yields a crescent-shaped profile.

Other similar storage jars with rounded rims have been published from Cistern 7 of Strip 1 of the Harvard Excavations at Samaria, dated no later than 300 B.C.,[11] Stratum I at Megiddo,[12] Persian period cisterns at Tell en-Naṣbeh,[13] Persian deposits at Lachish,[14] and probable Early Hellenistic contexts from the 1934 excavations at Samaria.[15]

SMALL JARS (Pls. 22: 1-3 and 74)

Pl. 22: 1-3 are small jars that have typical Early Hellenistic features. Note the rounded rims on Pl. 22: 2 and 3, similar to those on the Wâdī ed-Dâliyeh storage jars. Pl. 22: 1 has the characteristic Hellenistic concave jug base. Rim fragments of such vessels could easily be confused with early Hellenistic jar or jug rims and complete forms of these types are almost without parallel. A handleless pot with similar rim and base to Pl. 22: 1 but more squat in form comes from Samaria.[16]

JUGS (Pls. 21 and 75)

A similar jug to the typical Iron II jug but without the neck ridge probably replaced that type about the end of the fifth and beginning of the fourth century.[17] The Wâdī ed-Dâliyeh evidence indicates either a round base (Pl. 21: 1) or the typical Hellenistic concave base (Pl. 21: 3). The Wâdī ed-Dâliyeh jug rims are quite similar to jar rims, even as to diameter and ware thickness. Samaria Cistern 7, Strip 1 rims are more crescent-shaped, comparable to the Balâṭah Stratum IV jar rims.[18] Similar round-based jugs come from Megiddo Stratum I[19] and a probable fourth-century cistern at Tell en-Naṣbeh[20] and tomb at Atlit.[21] The concave base becomes the more usual Hellenistic jug form.[22] The earlier bases tend to be heavier and less angular than in late Hellenistic and early Roman times,[23] but wide variations occur. It should be noted that the handle attachment of Pl. 21: 3 is below the rim on the shoulder, a rather unusual feature for this time.

JUGLETS (Pls. 22: 4-7 and Pls. 74, 75)

Cave I at the Wâdī ed-Dâliyeh yielded several globular juglets and it is now evident that these go back at least to the late Persian period.[24] The early examples are perhaps heavier than the later, and the slightly everted rim in some may be chronologically significant.[25] It should be noted that flat-based globular juglets are missing from the third and second century B.C. Corpus,[26] but at the Wâdī ed-Dâliyeh (Pl. 22: 7) and in possibly late Persian contexts noted below there are flat as well as round-based juglets. Flat bases could perhaps be an early characteristic of these juglets that disappeared in Hellenistic times not to reappear until the Roman period.

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[5] See N. Lapp, "Pottery from Some Hellenistic Loci at Balâṭah (Shechem)," *BASOR*, No. 175 (Oct., 1964), p. 14.

[6] See Zayadin, *ADAJ*, XI (1966), pp. 53-54.

[7] From the writer's observation. For the date of Stratum IV see BULLETIN, No. 175, p. 14. Stratum IV pottery has not yet been published, but Stratum III B pottery, dated 250-225 B.C., is discussed in this article and many forms can be seen as comparable or near successors to the Wâdī ed-Dâliyeh material.

[8] Personal notes of Paul Lapp's after having kindly been shown the En-Gedi pottery by Prof. B. Mazar in Nov., 1967.

[9] *PCC*, Corpus 11.3; cf. p. 14.

[10] Personal observation of Balâṭah pottery. The type is referred to in *BASOR*, No. 175, p. 17, and cf. p. 16, Fig. 1a:1-2.

[11] *HES I*, Fig. 165, 1a-b, pp. 289-90, and *II*, Pl. 65a. For a discussion of the date see *HES I*, p. 62.

[12] *Meg. I*, Pl. 13:67, 10:46.

[13] *TN II*, types 233, 239.

[14] *Lachish III*, Pl. 96: types 524 and 525.

[15] *SS III*, Fig. 42:8-14.

[16] *HES I*, Fig. 177, and p. 301:5a.

[17] P. W. Lapp, *Galling*, pp. 183-84.

[18] *HES I*, Fig. 167; 4a, 4b. 5; cf. jar rim discussion *supra*.

[19] *Meg. I*, Pl. 2:68.

[20] *TN I*, cistern 361, pp. 137, 143; *II*, Pl. 28, type 476.

[21] *QDAP*, II (1933), 89; p. 92: Fig. 71, and Pl. XXX:1.

[22] *PCC*, Corpus 21. 1. F-K.

[23] *BASOR*, No. 175, p. 17.

Similar globular juglets have been found at Samaria Cistern 7, Strip 1 (dated down to 300 B.C.).[27] Flat and concave-based juglets may be noted. Tell Abu Hawam Stratum II (now dated to Alexander the Great)[28] produced several.[29] There are several juglets from En-Gedi Stratum IV published, two with flat bases, which are dated to the end of the fifth century.[30] One is published from a tomb at Atlit.[31] Round and flat based specimens come from Tell Jemmeh,[32] Tell en-Naṣbeh,[33] and Lachish.[34]

At Balâṭah several juglets very similar to those of Pl. 22: 7 were uncovered, even to the missing necks and rims.[35] The squat globular body shapes were the same although the Balâṭah juglets all have rounded bottoms. All were from unstratified contexts but it is likely that the Early Hellenistic period produced them.

MORTARIUM (Pls. 23: 1 and 75)

Mortaria first appeared in Palestine in the fifth century B.C., were probably most popular in the third century,[36] and continue to some extent into Late Hellenistic times.[37] The Samaritan refugees at the Wâdī ed-Dâliyeh had only one with them; no doubt its weight and shape made it difficult to carry. It is a well-made specimen with a plain thickened rim and heavy ring base. The form is not particularly characteristic of known Persian or third century mortarium forms.[38] Nearest parallels may be from the Samaria Theater[39] and Tell El-Fûl.[40]

COOKING POTS (Pls. 23: 2, 3 and 76)

The globular cooking pot, exemplified in two vessels from the Wâdī ed-Dâliyeh, has a similar form from Iron II down to Hellenistic, Roman, and Byzantine times.[41] Quite similar pots have come from the Samaria Theater,[42] Balâṭah,[43] a Persian context at Lachish,[44] and from Persian and Late Hellenistic contexts at Tell en-Naṣbeh.[45] Late examples include one from Ashdod[46] and those listed in *PCC*, Corpus 71.1.

Often distinctions over several centuries cannot be made by form alone, although a tendency toward finer, lighter ware is evident in late Hellenistic times.[47] The Wâdī ed-Dâliyeh pots exhibit better workmanship and thicker ware; in these respects they are more like Iron II pots than the later Hellenistic vessels.

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[24] Cf. *BASOR*, No. 175, p. 24.

[25] Cf. *PCC*, pp. 16-17.

[26] *PCC* Corpus 31.

[27] *HES I*, Fig. 167: 7a, 7b, 8a, 8b.

[28] *IEJ*, XVIII (1968), p. 213.

[29] *QDAP*, IV (1934), pp. 14-15. Note especially p. 14, #3 and p. 15, #9, the latest quite comparable to Pl. 22:6 from the Wâdī ed-Dâliyeh.

[30] *IEJ*, XVII (1967), Pl. 33: 1-3; p. 139.

[31] *QDAP*, II, 1933, Pl. XXIX, No. 781.

[32] *Gerar*, Types 77r, 57j.

[33] *TN II*, Pl. 38: 683, 684.

[34] *Lachish III*, Pl.89: 349.

[35] None are yet published, but they have been available to the writer for study through the kindness of G. E. Wright. Their registration numbers are B 60 3943A, B 60 3190A, and B 60 5894.

[36] This was certainly the case at Balâṭah.

[37] Cf. P. W. Lapp, *Galling*, p. 185; *PCC* Corpus 41; and *BASOR*, No. 175, pp. 17-18.

[38] Lacking is the rippled outside surface which seems to be confined to the Persian Period (Lapp, *Galling*, p. 185); note also that third-century forms at Balâṭah are often heavy with smoothly thickened rims on the exterior.

[39] *ADAJ*, XI (1966), Pl. 28: 29.

[40] *AASOR*, XXXIV-XXXV, Pl. 26:12. Note the redating of the Hellenistic material at this site, P. W. Lapp, "Tell el-Fûl," *Biblical Archaeologist*, XXVIII (1965), p. 7.

[41] P. W. Lapp, *Galling*, p. 186.

[42] *ADAJ*, XI (1966), Pls. 30:82, 83; 31:91.

[43] Published unstratified example, *BASOR*, No. 151, Fig. 3:1 and 4:1.

[44] *Lachish III*, Pl. 93: 461, from a Residency pit.

[45] *TN II*, type 1035.

[46] M. Dothan and D. M. Freedman, "Ashdod I," *'Atiqot* VII (1967), Fig. 6:5, 6.

[47] Cf. *PCC*, p. 19.

Chapter V

THE MIDDLE BRONZE OCCUPATION AND POTTERY OF ʿARÂQ EN-NAʿSÂNEH (Cave II)

William G. Dever

Introduction:

The MB I material from Cave II in the Wâdī ed-Dâliyeh consists of some 100 pieces of pottery: whole vessels, partially restored vessels, and sherds, (see Pls. 1-13). This pottery was excavated by Paul W. Lapp in two brief seasons in 1963 and 1964[1] and was subsequently entrusted to the writer for publication by Mrs. Lapp.[2] The following discussion is based upon the original field records and plans, as well as upon an examination of all the pottery.[3] After having described the circumstances of excavation, we shall proceed to a comparative study of the pottery, and finally will come to the question of the date and the historical and cultural significance of the material.

A. *Circumstances of Excavation.*

Cave II is the designation given to that part which was investigated of a labyrinthine cave complex called *ʿArâq en-Naʿsâneh* in the Wâdī ed-Dâliyeh (see Chapter I above, and Pl. 43). Beyond the entrance chamber, a sort of vestibule (Room 1), there lay an amorphous main chamber (Room 2), and beyond that, after a narrow passageway (Room 3), was a relatively larger inner chamber (Room 4). The MB I pottery from Cave II published here can be divided into two groups: (1) the 21 restorable pieces found *in situ* and plotted on Pl. 43 (Pls. 1-4), nearly all from Room 2; and (2) the more fragmentary pieces and sherds (Pls. 5-13), stratified but lacking information as to exact context, mostly from Rooms 2 and 4. Apparently, little stratification of the debris overlying the cave floor could be observed, although the accumulation reached *ca.* 2.00 m. in places. The following tentative picture of the Room 2 stratigraphy may be gleaned from the field notes and sketches of sections.[4] Overlying the floor of the caves was a deposit of up to 70 cm. of hardpacked dark red soil, probably *terra rossa*, mixed with small pebbles; to judge from the description, this material was virgin soil or topsoil washed into the cave by floods of the wadi.[5] Above this lay *ca.* 15-20 cm. of loose lighter red soil, mixed with some occupational debris; the MB I pottery seems to have been found resting on this material. Above this was 30-50 cm. of small rock chunks and more dark red soil, undoubtedly roof-fall and eroded materials marking an abandonment of the cave. This debris had crushed the MB I pottery and covered it almost completely. Overlying this was *ca.* 5 cm. of loose soft gray soil, occupational debris in which Roman pottery and other materials were found (see Ch. VI below). Above this there had accumulated in post-Roman times some 10-15 cm. of bat excrement.

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[1] There were nine days of excavation in Cave II between January 7 and 18, 1963, with Alexander A. Di Lella as Area Supervisor, and 10 days of excavation between February 3 and 13, 1964, with C. Umhau Wolf as Area Supervisor.

[2] The writer is grateful to Mrs. Lapp for permission to publish this material and for her assistance in providing the original field notebooks and photographs, as well as access to the material in Jerusalem (see n. 3 below). This chapter is written as a modest token of the writer's esteem for Paul Lapp, and every attempt has been made to give the material the thorough treatment that he would have accorded it, as everything else he undertook to study. Pls. 1-13 were prepared under Paul Lapp's supervision, and they have been left unchanged. Certain of the conclusions reached here had already been discussed with Lapp in 1967, when he was kind enough to go over some of the pottery with the writer.

Prof. Lapp came to MB I studies after first excavating the MB I material published here in 1963. The same year he excavated a cemetery at Dhahr Mirzbâneh, only five miles distant. The Bâh edh-Dhrâʿ excavations in 1965 had also produced some MB I material, as had chance finds at Tekoa, furthering Lapp's interest in MB I. He quickly mastered this field, as he had others, and by 1966 had already made significant contributions, as shown by his *The Dhahr Mirzbâneh Tombs: Three Intermediate Bronze Age Cemeteries in Jordan*, Publications of the Jerusalem School, Archaeology, Vol. IV (New Haven, 1965) [hereafter *Mirzbâneh Tombs*]. Whether he would have supported the present interpretation will not be known, but for some of his views on the period, and on the Dâliyeh material in particular, cf. *Mirzbâneh Tombs*, pp. 63-64, 80-85; "Archaeological News—The Samaria Papyri," *Archaeology*, XVI (1963), pp. 204-206; " Wâdī ed-Dâliyeh," in " Chronique Archéologique," *RB*, LXXII (1965), pp. 408, 409. For his latest views, including a reaction to some of the writer's proposals for the MB I period, see " Palestine in the Early Bronze Age," in *Near Eastern Archaeology in the Twentieth Century* [Glueck Festschrift], ed. J. A. Sanders (New York, 1970), pp. 101-131, esp. pp. 115-124. For a review-article on Prof. Lapp's *Mirzbâneh Tombs*, see W. G. Dever, " The Peoples of Palestine in the MB I Period," in the Lapp Memorial Issue of *HTR*, Vol. LXIV (1971), pp. 197-226 (hereafter " Peoples of Palestine ").

[3] The pottery (now housed in the Albright Institute of Archaeological Research in Jerusalem) was reexamined in 1971 and has been completely redescribed, using the Munsell Color Charts and the system of description currently in use by the Gezer excavation. (All the pieces were located except Pl. 4: 18).

The 21 pieces of pottery (located on Pl. 43) from Rooms 2 and 4 were *in situ* when found. However, no particular pattern can be observed in their placement. With the exception of a single lamp found at the entrance to Room 2 (see Pls. 1: 1 and 64: a), these pieces were either large ovoid storejars or globular cooking pots. In Room 2, 13 storejars were roughly grouped in the center of the chamber; two of the four cooking pots were with the storejars and two were close together off to one side. In Room 4, more remote, there were two cooking pots rather close together in the center and towards the back of the chamber a single storejar. The types of vessels, their random placement, their condition as found, and the stratification all suggest a cave used for dwelling and perhaps later for storage in MB I and then abandoned some time before the end of the period.[6] No evidence for a destruction was noted.

B. *The Ceramic Material.*

The MB I pottery of Cave II is rather restricted in the range of types represented, not an unusual situation for this period.[7] The repertoire consists of several kinds of ovoid jars with flat base; lug-handled amphoriskoi; large deep bowls; smaller beakers and cups; " holemouth " jars, including cooking pots; and four-spouted lamps. We shall discuss each type and sub-type in turn. In the comparisons, we draw upon an analysis published elsewhere which divides the pottery of MB I into several regional " Families," or geographico-cultural assemblages, with convenient designations for each: the Northern (N), North Central (NC), Jordan Valley/Jericho (J), Southern (S), Coastal (C), and Central Hills (CH) groups.[8]

1. *Large ovoid jars with flat base (several sub-types).*

a. *Ovoid storejars with ledge-handles.*

The three vessels of this sub-class (Pls. 1: 6; 2: 8; 3: 13 and 65) are typical examples of one of the most common forms of the MB I period.

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[4] We have thought it better not to attempt much detail, since the records available to us are not as full as might have been desired; furthermore, the writer did not have opportunity to visit the site either before or after the excavation, or to discuss the material with the supervisors. [Prof. Dever had available field notes from Room 2, where most of the MB I pots were discovered. The stratigraphy in Room 4 is also discussed below, pp. 49-50, where the same general picture is given, though details differ.—N. L. LAPP.]

[5] The assumption that the dark red soil was probably *terra rossa* is the writer's, based on observation of many excavated caves at Gezer, Jebel Qaʽaqīr and elsewhere. It was the opinion of the supervisors at Dâliyeh that several " wadi floods " had left traces in Cave II, but the writer has not seen the terrain and cannot offer independent confirmation.

[6] See below, p. 47.

[7] Note that the *Corpus* of some 150 vessels from the Mirzbâneh cemetery nearby (above n. 3) is similarly limited to a very few types, principally squat jars or " bottles " (see below), ovoid storejars with ledge or lug-handles, and four-spouted lamps.

[8] See Dever, " Peoples of Palestine," pp. 198 ff. One caution is worth remembering as we come to the comparative discussion which follows: the *tell* deposits (not the tombs) at both Megiddo and Jericho belong with Family S in *cultural* though not in geographical terms, so that parallels cited from these deposits are included in our " Southern Family." It should be noted that the *stratified* sites of Family J in Transjordan also overlap with Family S, and sub-divisions within Family J may eventually come to class them, like the *tell* at Jericho, with Family S. For an overview of the MB I Period, see W. G. Dever, " The ' Middle Bronze I ' Period in Syria and Palestine," Glueck Festschrift (n. 2), pp. 132-163 (hereafter " Middle Bronze I ").

The first feature of interest is the ledge handles. On one jar they are broken and thus indeterminate, though clearly not vestigial (Pl. 3: 13). The other two jars have large, well-formed functional ledge-handles of the "folded-envelope" variety. The degeneration of ledge-handles has long been recognized as typologically and chronologically significant.[9] These very distinctive large "folded-envelope" handles are among the earliest in the MB I series. They are found elsewhere only in the Jordan Valley, especially in the northern reaches, for instance at Megiddo, the el-Ḥuṣn Tombs, and numerous EB IV/MB I sites explored by Glueck.[10] It is significant that the Dâliyeh handles are identical to those in the northern Jordan Valley, while at Jericho itself and farther up in the Central Hills, at Gibeon and the Dhahr Mirzbâneh, the ledge-handles are still of the "folded-envelope" variety but noticeably smaller, becoming vestigial.[11] Farther south, in our Southern Family (Lachish, Jebel Qaʿaqīr, Tell Beit Mirsim, Tell-el-ʿAjjûl, etc.), the ledge-handles are all vestigial and on most storejars have disappeared altogether.[12] The Dâliyeh storejars on this evidence fall early in the sequence, midway between the Jordan Valley and the Central Hill groups but close to the former, and definitely earlier than the Southern group.

A second feature of interest on these storejars (and many other vessels at Dâliyeh) is the characteristic use of rope-moulding and varieties of thumb- or stick-impressed bands as decoration. Two of the three storejars under discussion (Pls. 2: 8; 3: 13) have this decoration, which is another striking link with the Jordan Valley. In fact, the thumb-impressed and rope-moulded wares are largely confined to early stratified groups in the Jordan Valley,[13] which to date are not nearly as well known as the later tomb groups from the Central Hills and elsewhere. The large Dâliyeh storejars are the first intact or restorable examples published of a class of thumb-impressed vessels which we knew previously only from sherds.

b. *Ovoid storejars with lug-handles.*

The two vessels of this sub-class are in no way unusual; they have fairly large functional lug-handles at the junction of the neck and shoulder

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[9] See W. G. Dever, "Vestigial Features in MB I: An Illustration of Some Principles of Ceramic Typology," *BASOR*, No. 200 (1970), pp. 19-30 (hereafter "Vestigial Features"), and references there.

[10] For the el-Ḥuṣn Tomb, see *PEFA*, VI (1953), Fig. 4: 56-60; for a sampling of Glueck's sites, see, for instance, Tell el-'Arbaʿîn, Tell Umm Ḥamâd Gharbī, and Tell en-Nekheil, *AASOR* XXV-XXVIII (1951), Pls. 35: 2, 3, 6; 36: 5-7; 73: 1, 3, 5; 93: 1-13.

[11] See *Jericho I*, Figs. 98: 9; 103: 5; 106: 1; 108: 3, 4; 110: 2, 3; *Jericho II*, Figs. 53: 9; 60: 2-6, 8; 61: 1-7; 63: 3-6; 64: 1-5; 67: 6, 7; 68: 1-6; 71: 1-5; 80: 2; 90: 8; *Mirzbâneh Tombs*, Figs. 6: 12-16; 18: 2; 19: 7; 37: 6; 39: 1, 2. The Gibeon ledge-handles are even more vestigial, scarcely recognizable as the "folded-envelope" variety; see *Gibeon*, Figs. 47: 1; 54: 2; 55: 1, 2; 58: 1, 2; 58: 1, 2; 65; 66.

[12] Examples are too numerous to cite, but cf. *TBM* I, Pls. 3, 4, 5, *passim*; and esp. *Lachish* IV, Pl. 67, *passim*. The "1500 Cemetery" at Tell el-ʿAjjûl, which is usually regarded as the earlier of the two cemeteries, has partially vestigial ledge-handles in nearly all the storejars, while the later "100-200 Cemetery" has only two; cf. *Ancient Gaza* II, Pl. XXIX, *passim*; *Ancient Gaza* I, Pls. XLI, XLII, *passim*. On the history of these ledge-handles, see Dever, "Vestigial Features," pp. 20-25.

[13] See *AASOR*, XV (1935), Pl. 25b (el-ʿAineh); *AASOR*, XVIII-XIX (1939), pp. 260-261 and references there; *AASOR*, XXV-XXVIII (1951), for the same sites as in n. 10 with "envelope-handles," Pls. 36: 1-4, 37: 1-9 (Tell el-'Arbaʿîn); Pl. 73: 6, 7 (Tell en-Nekheil; Pls. 95: 16, 96: 1-19 (Tell Umm Ḥamâd Gharbī); and *passim* for many other sites with thumb-impressed wares. Elsewhere in Transjordan, see Ader, *AASOR*, XXXIV-XXXV (1960), Pl. Figs. 13: 2, 18; 14: 1; Pls. 22: A; 23: B; 24: B (all Phases B, A); for Aroer. see *RB*, 76 (1969), Figs. 2: 13-17 (flanged-rim jars, *Niveau* VIb); 3: 1, 4: 3; 5: 10, 11 (deep bowls, *Niveau* VIb-a); for Jericho, *Jericho II*, Figs. 68: 1 (T. P24); Fig. 69: 2 (T. P24); *PEQ*, 86 (1952-53), Fig. 6: 38 (Trench I on *tell*; cf. p. 81, where it is reported that "many examples were found" in Trench I). Outside the Jordan Valley and immediate vicinity, there are very few examples of rope-moulding or thumb-impression except in the dubious cooking pots (cf. pp. 40-42 below) and the "envelope-handles." Note a single storejar like the Dâliyeh jars at Tell Beit Mirsim (*TBM I A*, Pl. 2: 8, Str. H); at Lachish, this decoration seems to be confined mostly to EB III-IV (*Lachish IV*, Pl. 62: 291-296; but cf. one example from L. 1529, Pl. 66: 425). This decoration, characteristic of Dâliyeh, is rare even elsewhere in the Central Hills: a few storejar necks are published from Bethel (*AASOR*, XXXIX [1969], Pl. 31: 6, 8, 19; 48: 2, 2); and there are two examples at Gibeon (*Gibeon*, Fig. 33: 44, body sherd; Fig. 66, a storejar with impressed band at neck, T. 62). These are virtually all the published examples of this decoration, so there can be little doubt that its main provenance is the Jordan Valley and Transjordan. For close Jericho parallels to combing of the entire body—equally rare—cf. Dâliyeh, Pls. 3: 15; 7: 16; 8: 24; and *Jericho II*, Figs. 28: 4; 64: 5; 80: 11.

(Pls. 8: 11; 12: 4) and are typical "amphoriskoi" (for parallels, see below).

c. *Ovoid Storejars with Vestigial Lug-handles.*

One storejar is represented in a sherd only (Pl. 6: 5) and seems to have a single unpierced vestigial lughandle at the junction of the neck and shoulder; but since all the parallels for such handles *in this position* show two handles,[14] we should probably restore the vessel with two. Two other storejars have a single unpierced lug-handle (Pls. 6: 1; 13: 2) which has "slipped" down the shoulder; the latter has the "horned" shape which is characteristic on these very late vestigial lug-handles.[15]

The functional lug-handles are not as common as the vestigial ones and are known from slightly earlier contexts, some of them in the north, i. e., the Megiddo, el-Ḥuṣn and Jericho Tombs;[16] they also appear in Family S in the Lachish "2000 Cemetery" and the Tell el-ʿAjjûl "100-200 Cemetery."[17] The storejars with one or two vestigial lug-handles are all from the Central Hills and particularly the Southern Families (above). Typologically as well as in their affinities with different families, the storejars with functional and vestigial lug-handles are distinct from those with "folded-envelope" ledge-handles, and they must be considered later. In the Dâliyeh material it is not clear whether the lug-handled and ledge-handled jars overlap, since the former consist only of sherds from Rooms 2, 4, and 5, while the latter are restorable pieces *in situ* (their position noted on Pl. 43) from Room 2. However, since stages in ceramic degeneration in MB I are certainly not clear-cut or mutually exclusive,[18] these groups could well be contemporary (see below for this likelihood).

d. *Ovoid storejars without handles.*

A number of the Dâliyeh storejars have no handles (Pls. 1: 3, 4; 2: 11, 12; 3: 14, 17; 13: 1). These handleless storejars are more common than those with handles, and in fact they are more numerous than any other single type in MB I. Of the examples published, two come from Megiddo and three are from Jericho; a few are know from Central Hills sites; but there are hundreds of examples from the Southern Family, from both stratified sites and tombs.[19] The proportions of the varieties of decoration on the Dâliyeh storejars are typical for other areas. Combing is the most common decoration, with three examples (Pls. 1: 3; 2: 12; 3: 14). There is one example of a combination of incision and combing and one of the failure to use any decoration (Pls. 2: 11; 3: 17). The use of thumb-impression (discussed above) is rare elsewhere except in the Jordan Valley, where it is impossible to tell from the published material how common it was in comparison to other types of decoration. At Wâdī ed-Dâliyeh it seems to be just as popular as combing, since we have three examples (Pls. 1: 4; 3: 13; 23: 1). At other sites in the Central Hills it occurs only sporadically, and the declining proportion of this distinctive decoration of Family J as we come from the Jordan Valley to Dâliyeh and finally to the inner sites of the Central Hills gives further evidence of the direct Family J/Dâliyeh connections we have already noted.

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[14] Only ten examples with two unpierced handles are published: *Kūfīn*, Pls. XI: 5; XII: 2 (T. 3); for Halhul, near Kh. Kūfīn, see Amiran, *Ancient Pottery of the Holy Land* (Rutgers, 1970), p. 80, Photo 78 (tomb); *Lachish IV*, Pl. 61: 483, 484 (three other unillustrated examples in T. 2046, 2049, 2116); *TBM II*, Pls. 2: 7 (Str. H); 45: 2 (attributed to Stratum G, but undoubtedly belongs to H). There are only two published examples with one unpierced handle at the juncture of the neck and shoulders; see Dever, "Vestigial Features," Fig. 1. 4 (Jebel Qaʿaqīr, Cave G26); *QDAP*, X (1944), Pl. XIV: 2 (tomb at Azor, near Tel-Aviv). In addition, the writer has seen several more unpublished vessels with two handles from Holon, near Azor, and he has a number of unpublished vessels with either one or two unpierced handles at the neck, from both tombs and stratified contexts at Jebel Qaʿaqīr.

[15] Again, published parallels are so few, mostly in the south, that all may be listed: *IEJ*, X (1960), Fig. 2: 3, p. 208 (tomb, Azor); *Lachish IV*, Pl. 67: 462 (T. 2001; 2024), 67: 466 (another unillustrated example in T. 2083); *TBM I* A, Pl. 2:1, 3, 4 (Str. H); Dever. "Vestigial Features," Fig. 1: 5, 6, 8 (Jebel Qaʿaqīr, Cemetery B and Cave G26). The only examples in the north, but still belonging to Family S in *cultural* terms (see n. 7 above), are two sherds from the *tell* at Megiddo (*Megiddo II*, Pls. 109: 2, Str. XVI; 115: 7, Str. XIV). From the Central Hills there are only two published examples: *Mirzbâneh Tombs*, Fig. 27: 9 (sherd, from T. A49); Bethel, *AASOR*, XXXIX (1969), Pl. 113b (photo only, sherd third from bottom right). The writer has seen unpublished examples at Azor (see n. 14), and he has several from Jebel Qaʿaqīr. The distinct "horn" shape on the Dâliyeh, Megiddo, Lachish, Tell Beit Mirsim and Jebel Qaʿaqīr vestigial lug-handles is probably to be connected with the upswept handles on the cups, originally functional but maintaining the "horn" shape even after they have become vestigial. Cf., for instance, *Megiddo II*, Pls. 9: 13 (Str. XV); 16: 16 Strat. XIIIB); *Lachish IV*, Pl. 66: 411, 412 (L. 1529); for Jebel Qaʿaqīr, see Dever, "Vestigial Features," Fig. 3: 12, 13 (Cemetery B).

[16] For Megiddo, see G. Shumacher and C. Watzinger, *Tell el-Mutesellim* (Leipzig, 1908), Abb. 266: k (two examples, from Tomb in Abb. 255); for the el-Ḥuṣn tomb, *PEFA*, VI (1953), Fig. 3: 46; *Jericho I*, Figs. 86: 7 (T. G65); 98: 1 (T. G40).

[17] See *Lachish IV*, Pl. 67: 481 (T. 2031; another unillustrated example in T. 2101); for Tell-el-ʿAjjûl, *Ancient Gaza I*, Pls. XLIV: 33M9 (T. 240, 280), XLIV: 33M10 (T. 227). The writer has one unpublished example from Cemetery B at Jebel Qaʿaqīr identical to the Lachish vessel. It should be noted that we are citing only the large ovoid *storejars*; the small amphoriskoi are basically the same shape, and a few of them have functional lug-handles (though most are nearly vestigial).

[18] On the history of these lug-handles and the general theory on which our assumptions rest, see Dever, "Vestigial Features," pp. 20-25. While it is possible to illustrate that there were actual stages in the process of degeneration, at least in the stylized conceptions prevalent, it must be remembered that many of these stages existed side by side, even at a given site.

e. *Ovoid storejars, handles indeterminate.*

There remains a number of storejars represented by sherds only, in which case it is impossible to say what kind of handles, if any, they had (Pls. 1: 2; 2: 10; 3: 15; 4: 18, 5: 1-10; 6: 2-4; 7: 1-7; 8: 1, 2, 4, 5, 10; 11: 5-7; 12: 1-3).

f. *Small squat ovoid jars or "bottles."*

These distinctive vessels, of which we have three examples in the Dâliyeh material (Pl. 8: 6-8), have only recently been recognized as a peculiar local variant of the Jericho and Central Hills groups. The vessels are very much like squat milk bottles in appearance, usually uniform in size (12-20 cm.), and rather crudely handmade; they may have a flange-like constriction at the neck, probably formed when the neck and rim were wheel-finished. They are best understood simply as "miniatures" of the typical flat-based ovoid form that is characteristic of many ceramic types in MB I. At Jericho, where they were first published in large numbers, they were confined to tombs, especially those of the "Pottery" type.[20] Since they seem to have been made in groups by a single potter and placed in the tombs unused, Kenyon regarded them as special funerary vessels.[21] Subsequent publication of tomb groups from Gibeon, Mirzbâneh, ʿAin es-Sâmiyeh, and also from Olivet, Silwan and other sites in the immediate vicinity of Jerusalem,[22] makes it clear that these "bottles" are as typical for the Central Hills as they are for Jericho. Since they occur *only* in these areas, they are an indisputable link between the two Families. The Dâliyeh "bottles" are unexceptional in every way; they are of the simple variety, undecorated and without neck constriction. They are identical, for example, to those from nearby Mirzbâneh and Gibeon, on the one hand, and to Jericho on the other hand.[23] They are significant in that they constitute one of the diagnostic types for Family CH and help to distinguish it,[24] and also for the fact that they are the first stratified examples of this type to be found anywhere.

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[19] See *Megiddo II*, Pl. 8: 3, 4 (Str. XV); for Jericho, K. Kenyon, *Archaeology in the Holy Land* (New York, 1960), Fig. 33: 2, 3 (the *tell*). For the Central Hills, see *BASOR*, No. 71 (1938), Fig. 2; 6 (ʿAin Kârem); *Gibeon*, Fig. 56: 1, 2 (T. 50); *Kūfīn*, Pl. XI: 1, 3, 4, [illegible] (T. 3). There are dozens of examples from Lachish and Tell el-Ajjûl; see *Lachish IV*, Pl. 67, *passim*; *Ancient Gaza I*, Pl. XLI, *passim*; see also *TBM I* A, Pl. 2: 5 (Str. H). There are a number of unpublished examples from Jebel Qaʿaqīr.

[20] *Jericho I*, Figs. 75, 79, 81, 86, 95, 98. 103, 108, 110, *passim*; *Jericho II*, Figs. 28, 36, *passim*; they also occur sporadically in the "Square-shaft" tombs (Fig. 43), in the "Outsize" tombs (Figs. 47, 53, 54), the "Composite" tombs (Fig. 86), and the "Multiple" tombs (Fig. 89).

[21] Kenyon, *Jericho I*, p. 203.

[22] The examples are too numerous to cite in detail, but see the tombs in *Gibeon*, Figs. 19: 7; 33: 38-40; 35: 2; 56: 3-5; 62: 34-40; 64: 1-7; *Mirzbâneh Tombs*, Figs. 2, 3, 5, 12, 13, 15, 19, 24, 27, 32, 33, 35, 37, *passim*; for ʿAin es-Sâmiyeh, see Dever, "MB I Cemeteries at Mirzbâneh and ʿAin es-Sâmiyeh," *IEJ*, XXI (1971), (hereafter "ʿAin es-Sâmiyeh"), Fig. 1: 7-9; for Silwân, *ADAJ*, VIII-IX (1962), Pl. XXXV: 6, 7, 15 (tomb); for Olivet, Kenyon, *PEQ*, XCVIII (1966), pp. 74, 75, Pl. XXIII: B(T. C2); for ʿAin Kârem, *BASOR*, No. 71 (1938), Fig. 2: 6.

[23] See, in general, references in n. 22 above. The identity extends even to details such as the constriction or "flange" at the neck on some examples, although the Dâliyeh examples do not have it; cf., for instance, *Jericho I*, Fig. 81: 8; *Mirzbâneh Tombs*, Fig. 32: 10, *Gibeon*, Fig. 62: 34.

[24] On recent recognition of the CH Family, see Dever, "Peoples of Palestine," p. 204; see also Ruth Amiran's independent characterization of a "Family D," "The Pottery of the Middle Bronze Age I," *Qadmoniot*,

3. *Large " Bottle Amphoriskoi."*

" Bottle amphoriskoi " is our term for a rather unusual variety of the typical amphoriskos with two functional lug-handles at the juncture of the neck and rim, which differs from the ordinary amphoriskos simply by having a very narrow and sometimes elongated neck. The " bottle amphoriskos " is typologically quite close to EB prototypes, and there are a number of examples of the MB I variety in early groups, including stratified contexts, both north and south.[25] The type seems, however, to be equally at home in later tomb groups of the Southern Family.[26] No particular regional variations occur except for " miniatures " recently discovered in our North Central (Jezreel) Family,[27] and no typological development within MB I seems discernible. The single example from the Wâdī ed-Dâliyeh (Pl. 8: 12) is typical, with close parallels at Megiddo, Jericho, and at Lachish and Tell el-ʿAjjûl in the south.[28] It is of special interest chiefly in that it is the first occurrence of this type in the Central Hills area, linking this area again with the Jericho and Southern Families.

4. *Large cups or " beakers."*

The two Dâliyeh vessels (Pls. 12: 6; 13: 3) help to distinguish a special type of outsize cup which is known only from scattered examples. These large cups or " beakers " are very similar to the ubiquitous MB I band-combed cups with cyma profile, even to their decoration with alternating straight and wavy combed lines, but the few examples known to date are rather consistent in being *ca.* 15-17 cm in diameter, as compared with an average of about 8-10 cm. for the cups. The body of the " beakers " tends to be straight or slightly concave, with the upper shoulder sloping in toward the rim. Another criterion for distinguishing them is that the " beakers " seem to be typical of stratified sites, mostly southern; while the cups are confined mostly to tombs and occur all over the country. Examples of our " beakers " have been published from the *tells* at Jericho, Lachish, and Tell Beit Mirsim, and also from tombs at ʿAin es-Sâmiyeh.[29] Two Dâliyeh " beakers " are most closely paralleled by several from the " 1500 Area " at Lachish but also have good counterparts at Jericho, so we have another linkup between the Southern and Central Hills Families.

5. *" Teapots."*

The single " teapot " among the Dâliyeh materials (Pl. 12: 5) is represented only by a sherd, and thus it is not clear whether it had a handle. Neckless or low-rim " teapots " of this type, usually with band-combing as on the Dâliyeh example, are well known from the Central Hills area and especially from the Jericho and Southern Families.[30] Without exception they have a vestigial ledge or lug-handle, so we may assume that the Dâliyeh " teapot " probably had a handle.

II (1969) [Hebrew], p. 48. For the story of the recognition of the " bottles " as a diagnostic type, and many unpublished examples, see Dever, " ʿAin es-Sâmiyeh," pp. 98, 99.

[25] *Megiddo II*, Pls. 13: 7 (Str. XIV); 16: 8 (Str. XIIIB); *Megiddo Tombs*, Pl. 4: 30 (upper fill in T. 910E); Sellin and Watzinger, *Jericho, die Ergebnisse der Ausgrabungen* (Leipzig, 1913), p. 108, Abb. 93 (two examples from *tell*); *Lachish IV*, Pl. 66: 417, 419 (L. 1529; four more unillustrated examples from L. 1518).

[26] See especially Tell el-ʿAjjûl, *Ancient Gaza I*, Pl. XLIX: 69L (T. 113); *Ancient Gaza II*, Pl. XXXV: 69L2 (T. 1564); for Jericho, see *Annals of Archaeology and Anthropology, University of Liverpool*, XXI (1934), Pl. XVII: 14 (Tomb 1). The writer has a number of unpublished examples from both tombs and stratified contexts at Jebel Qaʿaqīr and from Kh. Kirmil, east of Samūʿa.

[27] For the miniatures, the vessel from the el-Ḥuṣn Tomb (*PEFA*, VI [1953], Fig. 1: 10) was the only one known until very recently. Now see R. Gophna, "A Middle Bronze Age I Tomb with Fenestrated Axe at Maʿabarot," *IEJ*, XIX (1969), Fig. 3: 5, 6. In addition, the writer has seen unpublished examples from Beth-Shan and Hazorea. This seems to be a distinctive type of our Family NC, around the Jezreel Valley.

[28] Cf. notes 25, 26 above.

[29] For Jericho, see *PEQ*, LXXVI (1952-53), Fig. 6: 45 (" Trench I "); *Lachish IV*, Pl. 66: 404, 405 (L. 1529); *TBM IA*, Pl. 3: 14 (Str. H); "ʿAin es-Sâmiyeh," Fig. 2: 9. There are several nearly identical unpublished " beakers " from Jebel Qaʿaqīr.

[30] For the CH examples, see n. 31 below. For the J Family see *Jericho II*, Figs. 65: 1 (T. 01); 80: 5 (T. M14); note that we do not consider here the numerous ledge-handled spouted jars from the Jericho tombs, though they resemble the " teapots." For Family S, see *Lachish IV*, Pl. 66: 452 (T. 2002), 453 (T. 2006); for Jebel Qaʿaqīr, " Vestigial Features," Fig. 3: 3, 7 (tombs). The writer has more than a dozen unpublished examples from tombs at Jebel Qaʿaqīr and Kh. Kirmil.

Close parallels in the Central Hills are somewhat rare but may be found at Silwân, Mirzbâneh, ʻAin es-Sâmiyeh, and Râs Ṭawīl.[31] The Dâliyeh "teapot" is significant as the first certain example anywhere from a stratified context.

6. *Small "tumblers."*

The small "tumblers" resemble an ordinary tall slender drinking glass. The type is not well known to date, with only three published examples, from Jericho, Jebel Qaʻaqīr, and ʻAin es-Sâmiyeh.[32] It is interesting to note that these three examples span the three Families we have most often connected, the Jericho, Central Hills and Southern Families, and that they come from both tombs and stratified contexts. Thus the two Dâliyeh "tumblers" (Pls. 8: 9; 9: 6), despite the rarity of parallels, fit the type as we would project it and also conform to its expected distribution. The second of the Dâliyeh "tumblers" (Pl. 9: 6) has two unusual features. The small projecting knob is undoubtedly a vestigial spout and may be compared to a similar vestigial spout (or handle) on the "tumbler" from nearby ʻAin es-Sâmiyeh.[33] Note also the large functional handle, which is otherwise unknown on this type but appears on two "mugs" of related type, identical to one example from Jericho even in the pronounced upsweep.[34] The "mugs" seem to be a distinctive (though little-known) type of the Central Hills and Southern Families,[35] and to find that they influenced the "tumblers," with an identical distribution, would not be surprising. In fact, it may be necessary to combine two as subtypes of a more general category as additional examples become known.

7. *Combed Cups.*

The cups of MB I, which gave the period its "caliciform" designation, are exceedingly common and widely distributed. There are several varieties of cups, but among the most frequent are those with a cyma profile and bands of straight or alternating straight and wavy combing. The five Dâliyeh cups (Pl. 9: 1-5) are of this type and find their closest parallels in stratified sites of our Southern Family.[36] A few similar cups are known from Jericho, both in the tombs and in the *tell*, as well as at Olivet, Gibeon, and Bethel in the Central Hills, but the fact that these cups are characteristically southern and rare elsewhere[37] means that the Dâliyeh examples are linked primarily with the Southern Family and only secondarily with the Jericho/Jordan Valley Family.

8. *Jars with everted flanged rim.*

These jars have upper shoulders which curve inward like those of the true "holemouth" jars, but they have a sharply everted, short flaring rim. The type is just beginning to be attested, but the published examples suggest that the rim normally is scalloped. Nearly all examples are band-combed. Since only rims are published, we do not know what the whole form looks like, but one may assume that it has a flat base. Despite its similarity in form to the MB I "holemouth" cooking pots (below), this vessel is not made in cooking-pot ware and should be carefully distinguished as a separate type. It had been known thus far only from stratified sites of Families J and S—Ader, Aroer, Lachish, Tell Beit Mirsim, and Jebel Qaʻaqīr.[38] The single example at the Wâdī ed-Dâliyeh (Pl. 8: 3) has the expected rim and decoration and is another clear link with these Families.[39]

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[31] For Silwân, *ADAJ*, VIII-IX (1964), Pl. XXV: 8 (Tomb); *Mirzbâneh Tombs*, Figs. 2: 7, 15: 5 (T. A18), sherds only (may be parts of single vessel); Dever, "ʻAin es-Sâmiyeh," Fig. 2: 2-4; for Râs Ṭawīl, see *IEJ*, X (1960), Fig. 2: 11, p. 208.

[32] *Jericho II*, Fig. 80: 12 (T. M13); for Jebel Qaʻaqīr (where there are also several other unpublished examples), see Dever, "Middle Bronze I," Fig. 4: 7 (Cairn 4); "Vestigial Features," Fig. 3: 9 (tomb).

[33] Dever, "Vestigial Features," Fig. 3: 9.

[34] See *Archaeology in the Holy Land*, Fig. 32: 4 (*tell*); for the other "mug," with a loop handle, from the Tel-Aviv area (probably Azor or Holon), see *IEJ*, X (1960), Fig. 2: 13, p. 208.

[35] The only one-handled "mugs" published to date in addition to the two in n. 34 above are from CH and J Families; see Dever, "ʻAin es-Sâmiyeh," Fig. 2: 8 (tomb); Sellin and Watzinger, *Jericho, die Ergebnisse der Ausgrabungen* (Leipzig, 1913), p. 109, Abb. 99, 100; p. 110, Abb. 101 ("horn," shape; all three Jericho examples combed, from *tell*).

[36] *Lachish IV*, Pl. 66: 397, 410 (L. 1529); *TBM IA*, Pl. 3: 1, 3, 8 (Str. H).

[37] *Jericho II*, Fig. 28; 6 (T. D2); *Archaeology in the Holy Land*, Fig. 32: 3 (*tell*); *PEQ*, LXXXVI (1952-53), Fig. 6: 45 (Trench I); for el-Meṭabe, near Jericho, see *Biblica*, X (1929), Pl. 3: 2 (chance find, from tomb); *Gibeon*, Fig. 30: 20 (T. 22); for Bethel, *AASOR*, XXXIX (1969), Pl. 48: 8, 9; *passim*; for Olivet, in Jerusalem, see *PEQ*, XCVIII (1960), Pl. XXIII: B (T. C2); for Beit Ṣāḥûr, near Jerusalem, see *BASOR*, No. 71 (Oct., 1938), Fig. 2: 3 (tomb); for Kūfīn, on the southern boundary of Family CH, see *Kūfīn*, Pl. XI: 6 (T. 3). In addition, the writer has seen more than a dozen unpublished examples at Holon, near Tel-Aviv, and he has many examples from Jebel Qaʻaqīr and Kh. Kirmil.

9. *"Holemouth" cooking pots.*

The large "holemouth" cooking pots are among the most distinctive items in the Dâliyeh repertoire. They are also one of the most numerous types, second only to the combined classes of the ovoid flat-based jars, with 29 examples. The "holemouth" cooking pots at Dâliyeh can be divided into three subclasses on the basis of the rims: 1) simple bulbous rims, generally indistinguishable from the EB "holemouth" rims, with one example (Pl. 9: 7); 2) simple rims, rather sharply cut at an oblique angle, often producing a slight flange, with six examples (Pls. 9: 8-12; 12: 7); 3) cut flanged rims like the above, but with a rope-moulded band below the flange, the most numerous subtype, with 22 examples (Pls. 1: 5, 7; 2: 9; 3: 16; 4: 19, 20; 9: 13-15; 10: 1-12; 12: 8).

To appreciate the full significance of the Dâliyeh cooking pots, it will be necessary to devote a short excursus to the MB I cooking pot, which has never been fully treated. Until recently the shallow, straight-sided cooking pot with flat base, and with rope-moulding and pierced steam-holes below the rim, was thought to be the classic and in fact the exclusive type of cooking pot in MB I.[40] However, we would make several observations that raise doubts. First, at a number of older sites, Tell Beit Mirsim, Jericho, Bethel, Megiddo, and Lachish, where the classic form was distinguished by Albright and others, it can be shown that the "holemouth" cooking pot was at least an alternate form, not always recognized or published as such by the excavators.[41] Second, virtually all sites where sherds of the classic cooking pot were found in stratification—Tell Beit Mirsim, Jericho, Megiddo, Beth-shan, Hazor—there are both MB I and MB IIA levels, with obvious mixtures in the published materials, so that these examples cannot be attributed with certainty to MB I.[42] In the third place, at a number of one-period sites where the MB I date of the material is indisputable, Har Yeruḥam, Dhahr Mirzbâneh, Jebel Qaʿaqīr—there is not a single example of the classic cooking pot, while there are dozens of “ holemouth ” cooking pots.[43] At other sites where the MB I occupation may not be exclusive but is certainly clear, Ader, Aroer, and other sites in Transjordan and the Jordan Valley (Glueck's surveys), Maʿayan Barukh, Kedesh, Bethel and now the Wâdī ed Dâliyeh, the globular “ holemouth ” cooking pots appear and there are no examples of the classic form.[44] Finally, at a number of MB IIA sites that have no MB I occupation whatsoever, Shechem, Gezer, etc., the classic “ MB I ” cooking pot appears in abundance.[45] In summary, the only site where the evidence for the straight-sided cooking pot in MB I seems incontestable is *Niveau* VIa-b at Aroer (in Transjordan), where this form is said to be characteristic.[46] The other site that may support the traditional view is Lachish; there are a few of these cooking pot sherds from the “ Northeast Section ” and two examples from the “ 1500 Area,” and it is difficult to assign them to MB IIA since this period of occupation is not presently attested.[47] (These examples, however, cannot be considered as stratified, and it would be well not to rest too much weight on them.)

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[38] For Ader, see *AASOR*, XXXIV-XXXV (1960), Fig. 14: 12 (Phase B); for Aroer, see *RB*, LXXVI (1969), Fig. 2: 13-17 (*Niveau* VIb); *Lachish IV*, Pl. 66: 420, 421 (L. 1529); *TBM IA*, Pl. 3: 4 (Str. H); for Jebel Qaʻaqīr, from which there are more unpublished examples, see Dever, "Middle Bronze I," Fig. 4: 8 (Cairn 4). These scalloped-rim jars are probably to be related to a few vessels of nearly identical shape (though with slightly longer everted rim and less of the "holemouth" appearance), also normally band-combed; see *TBM IA*, Pl. 3: 6 (Str. H); Bethel, *AASOR*, XXXIX (1969), Pl. 113a (at upper left; sherd in photograph only, but appears to be identical to Tell Beit Mirsim example); for Jebel Qaʻaqīr, see Dever, "Middle Bronze I," Fig. 4: 9 (Cairn 4; a number of other unpublished examples); for el-ʻAineh, in southern Transjordan, see *AASOR*, XV (1935), Pl. 25B: 16. There are several vessels very similar to these two types at the small settlement of Har Yeruḥam, south of Beersheba; the material is unpublished, but is mentioned here through the courtesy of Moshe Kochavi (for references to Yeruḥam, see Dever, "Middle Bronze I," p. 135, nn. 5, 22). Olávarri thinks that the Aroer scalloped-rim jars are distinct from the vessels cited here and that the latter belong instead with the "holemouth" tradition; see *RB*, LXXVI (1969), p. 248, n. 40. Whatever the ultimate derivation, it is to be noted that none of these vessels is in cooking-pot ware, as the true "holemouths" of MB I are (see below). In any case, the Aroer, Lachish, Tell Beit Mirsim and Jebel Qaʻaqīr jars with scalloped rim are *identical*, despite Olávarri.

[39] Note the nearly identical jar from Bethel (n. 38 above), also in the Central Hills Family. These two are the first witness to this type in the Central Hills.

[40] The view originated with Albright, as did the hypothetical development from fully-pierced holes in MB I to partially-pierced holes in MB IIA; cf. *TBM I*, pp. 11, 13 (also n. 48 below). He was followed by Wright and Glueck in the 1930's and most scholars after that.

[41] Note three examples from Tell Beit Mirsim, which Albright correctly recognized as MB I cooking pots in the EB tradition, but thought rare (*TBM I A*, Pl. 3: 33-35, Str. H; pp. 11, 12). Even from the photographs (there are no drawings), it is clear that these can be distinguished from the bulbous-rim EB "holemouth" by their cut and slightly flanged-rim, exactly like those at Jebel Qaʻaqīr and Har Yeruḥam (Subtype 2 above). For "holemouth" cooking pots from Kenyon's "Trench I" at Jericho, identical to Dâliyeh examples (in contrast to Garstang's straight-sided vessels, found with *MB II material*, cf. n. 42 below), see *PEQ*, LXXXVI (1952-53), Fig. 6: 36, 37. At Bethel, no straight-sided cooking pots are published from the MB I occupation, but there are two "holemouths"; the significance of these vessels was not recognized but the description makes it clear that they were cooking pots; see *AASOR*, XXXIX (1969), Pl. 48: 4, 6. At Megiddo, the stratigraphic mixture of Strata XV-XIII, the "MB I" levels, makes precision impossible, but note several "holemouth" cooking pots; *Megiddo II*, Pls. 8: 7 (Stratum XV); 13: 12 (Stratum XV); *Megiddo Tombs*, Pl. 4: 13 (T. 910A, fill); and especially the five examples in T. 1101B Lower, Pls. 4: 13; 6: 28, 29; 7: 5, 8 (the material is mixed with some EB, but most vessels are MB I; note that Pl. 6: 28 has the impressed band at the rim, like Dâliyeh). "Holemouths" at Lachish are less certain, but note that demonstrable EB III/IV-MB I mixtures occur in several *loci* in the "1500 Area" (L. 1500, 1513, 1519, 6013,

The evidence we have cited poses difficulties for any view, but at the very least it means that we can no longer consider the classic form as the “ typical ” MB I cooking pot. It also

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6031, etc.), so some of the “ holemouth ” cooking pots published from there could conceivably be MB I.

[42] For the straight-sided cooking pots from these sites, see *TBM I*, Pls. 3: 26-31 (Stratum I); 4: 29-33 (I-H); 5: 1-6 (H); 7: 1-10 (G, *sic*); for Jericho, see *Annals of Archaeology and Anthropology, University of Liverpool*, XXIII (1935), Pl. XXXII: 3-7 (*tell*); *Megiddo II*, Pls. 7: 10, 11; 9: 19 (Str. XVII-XV); *Hazor III-IV*, Pls. CCXXV: 12-14 (L. 4026a, Str. 15, Area BA); CXCVII: 10 (L. 3332, Area B); CXCVI: 7 (L. K1, Area A); CLVI: 24, 25 (L. 383c, 389c, Str. XVII, Area A) and for Beth-shan, see *Museum Journal*, XXIV, p. 20, Pl. IX: 6, Str. XI. Note that the few sherds of this type at Tell Farʿah (N.) were found with clear MB II material; cf. *RB*, LIV (1947), Fig. 8: 6, 10. The only occurrences at sites where there may be no MB IIA occupation, so far as we know, are those at Lachish (n. 47). At Tell Beit Mirsim, some mixture is clear, since a number of examples were first attributed to Str. G, from MB IIA (above). It is well known that much of the material of Megiddo XV-XIII is actually MB II A. Note also that all the *loci* from which the Hazor examples come (above) are either considered by the excavators as unstratified, or else have a high percentage of early MB II material. (That there is MB II A occupation at Hazor is not widely recognized, but the recent discovery of an MB II A-B tomb only confirms the impression gained by careful study of the report volumes; the writer expects to treat the MB II A period in connection with the forthcoming publication of the MB II A material from Shechem).

[43] There are numerous examples of “holemouth” cooking pot rims, the only type that occurs, at Har Yeruḥam (n. 38 above), including forms identical to all the subtypes distinguished here. For Mirzbâneh, see *Mirzbâneh Tombs*, Fig. 18: 3 (T. A31: identical to the Dâliyeh examples); for Jebel Qaʿaqīr, see Dever, “ Middle Bronze I,” Fig. 4: 11-14 (Cave G26, Cairn 4; in addition, there are some 80 unpublished examples of this rim).

[44] For Ader, *AASOR*, XXXIV-XXXV (1960), Fig. 14; 2, 7, 10, 19 (cut rim), 21 (Phase B). Careful searching through Glueck's volumes (*AASOR*, XIV, XV, XVIII, XV-XXVIII) has not turned up a single example of the classic form, though there are a number of “ holemouths ” exactly like our cooking pots (from Tell en-Nekheil, for instance, where we have already noted thumb-pressed ware and “ envelope-handles ”; *AASOR*, XXV-XXVIII (1951), Pl. 145: 14). In the writer's examination of nearly all Glueck's Negev MB I pottery in Cincinnati, only one example of the classic form has been noted. For Maʿayan Barukh, see *ʿAtiqot*, III (1960), Fig. 6: 3 (T. III; slightly everted rim, but thought possibly a cooking pot by Amiran, p. 92). For Bethel, see n. 41 above. A newly discovered MB I tomb at Kedesh, on the Lebanese border, has a considerable number of globular vessels with short, slightly everted rim, like the Maʿayan Barukh example above, obviously used as cooking pots (these vessels are mentioned through the courtesy of Miriam Tadmor, who is to publish them shortly). Note that these are the typical cooking pots of North Syria at the time, as for instance in the ʿAmûq, Phases I-J; cf. Braidwood, *Excavations in the Plain of Antioch*, I (Chicago, 1960), pp. 404, 405, Fig. 390: 2, 5 (I); p. 432, Fig. 333: 6 (J).

[45] See Dever, “ Middle Bronze I,” notes 64, 65.

[46] See *RB*, 76 (1969), Fig. 3: 9, 10 for the “ holemouth ” cooking pots (*Niveau* VIb, slight groove below rim). However, the classic cooking pot (Fig. 5: 12) is said to have occurred in *Niveau* VIb and to have been “ characteristic ” in *Niveau* VIa (p. 255).

[47] *Lachish IV*, pp. 55-59; Figs. 3: 176; 4: 212, 219-222, 226, 256; 5: 326 (“ Northeast Section ”); Pls. 57: 69 (L. 1500); 66: 415 (L. 1529).

means that the typological development that has been postulated, from fully-pierced steam-holes in MB I to partially-pierced holes in MB IIA, must be reexamined, as must the argument for cultural continuity between MB I and MB II which is based partly on this supposed sequence.[48] If the straight-sided cooking pot belongs to the MB I period at all, it is probably a relatively rare form, and we should not rule out the possibility that it was introduced only very late in the period under new influences that belong to the cultural phase called MB IIA.[49] The really “typical” MB I cooking pot is the large globular “holemouth” jar now known from the first restorable examples in the Wâdī ed-Dâliyeh and thus recognizable at a number of other sites.

As to the Dâliyeh cooking pots, note first their incredible size. They are really “cauldrons,” some of them (Pl. 1: 5) running up to 40 cm. in diameter. They are not only large but extremely well made, with rims finely wheel-cut and finished and the rope-mouldings quite carefully fashioned. That they were made and transported (?) by people who were semi-nomadic is all the more astonishing. Secondly, these “holemouths” are clearly in the Early Bronze tradition and in fact go back to some extremely close parallels in the Late Chalcolithic period. Even in details such as the raised and thumb-impressed band below the rim, the ancestry of our “holemouths” is clear.[50] However, the Dâliyeh cooking pots are the first intact or restorable examples of the MB I “holemouths” and prove that they can be distinguished from the EB variety by the fact that they have a round rather than a flat base. The Dâliyeh cooking pots provide one more general link with EB, reinforcing a connection which should be obvious but is all too often overlooked, with the result that unfortunate and misleading cultural conclusions are drawn.[51]

10. *Four-spouted lamps.*

The three examples of four-spouted lamps from Dâliyeh (Pls. 1: 1, 11: 1, 2) are of the flat-based type which occurs at nearly all MB I sites and is in fact more common than the round-based variety. One lamp (Pl. 1: 1) is of particular interest because of its unusual depth, paralleled only at Jericho (see below). These lamps have been found more frequently in tombs than in stratified contexts, but a number of good parallels now exist in stratified contexts at Megiddo, Jericho, Iskander and Jebel Qaʿaqīr.[53] Since these lamps occur in tombs at Jericho and also in the vicinity of the Wâdī ed-Dâliyeh at Mirzbâneh, Gibeon, Silwan and elsewhere,[53] and are especially characteristic of Family CH, the Dâliyeh lamps reinforce the connections we have already observed between Family CH and Families J and S.

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[48] The typological development projected by Albright (n. 40 above) did indeed seem logical but has not been supported by clear-cut stratigraphic evidence, as all such sequences must be; on the contrary, the fully-pierced and partially-pierced rims whatever their absolute date, appear side-by-side in the same *loci* at Shechem, Gezer, and elsewhere. Note that the insistence of Amiran (*IEJ*, X [1960], p. 205, Fig. 1) on continuity between MB I and MB IIA seems to be based on supposed sequences such as that assumed for the straight-sided cooking pots (although she does not mention them specifically). For what we believe to be the complete cultural break at the end of MB I, with Wright and Kenyon and against Amiran, see Dever, “Middle Bronze I,” p. 144, n. 65 and references there.

[49] On the possibility of an overlap between MB I and MB IIA *in Syria*, see Dever, “Middle Bronze I,” n. 37; and on the basic identity of the MB I and MB IIA peoples of Palestine (ethnically, although not culturally) and the assimilation of MB I to MB II A, see Dever, “Peoples of Palestine,” pp. 224-225.

[50] That these thumb-impressed “holemouth” rims begin in Late Chalcolithic/EB I is too obvious to require documentation, but see, for example, rims nearly identical to ours from Glueck's Chalcolithic/EB I sites in the Jordan Valley; *AASOR*, XXV-XXVII (1951), Pls. 133: 1-6 (Tell Deir Saʿaneh Mekhlediyeh); 157: 8 (Tell Umm Ḥamâd Sherqi); etc.

[51] See n. 48 above for a cultural break between MB I and MB II A; and for a strong argument for EB-MB I continuity. Dever, “Peoples of Palestine,” pp. 210, 211, and “Middle Bronze I,” p. 147.

[52] *Megiddo II*, Pl. 9: 20 (Stra. XV; another unillustrated example); *Archaeology in the Holy Land*, Fig. 32: 5 (*tell*); for Iskander, *ADAJ*, IV-V (1960), Fig. 1: 18 (period 3); for Jebel Qaʿaqīr, see Dever, “Middle Bronze I,” Fig. 4: 6 (Cave G26). Examples from tombs are too numerous to list, but may be found in the cemeteries at Megiddo, Beth-shan, the el-Ḥuṣn Tomb, Jericho, Lachish, Yazûr (Azor), and Jebel Qaʿaqīr (unpublished). For tombs in the Central Hills, see n. 53 below.

[53] Examples are too numerous to list, but see *Mirzbâneh Tombs*, Fig. 2: 1, 2 ff., both flat-based and round-based varieties (some 35 in all); *Gibeon*, Fig. 14: 5, 6 ff. (some 30 examples); for Silwân, *ADAJ*, VIII-IX (1960), Pl. XXV: 10, 16 (tomb); Dever, “ʿAin es-Sâmiyeh,” Fig. 3: 1-2 (tomb); also *Kūfīn*, Pls. X: 6-8; XI: 9, 10 (T. 2, 3). Note that the only parallel—and a perfect one at that. since both are *ca.* 6 cms. deep—for the

C. *The Date and Significance of the Dâliyeh Cave II materials.*

1. *Summary of the Relation of the Wâdī ed-Dâliyeh to other MB I Families.*

The date and significance of the Dâliyeh MB I material are best discussed in relationship to the MB I Families which provide an understanding of the material culture of Palestine as a whole in this period. The following chart will help summarize the detailed connections we have noted in the comparative discussion.

The significance of the facts recorded here in tabular form will be seen if we note, for instance, the number of ceramic types at Dâliyeh which have links with each of the Families. There are 13 Dâliyeh types and subtypes on which we have suficient information to base comparisons. The breakdown is as follows:

1 Dâliyeh type has connections with the N Family
5 Dâliyeh types have connections with the NC Family
9 Dâliyeh types have connections with the CH Family
10 Dâliyeh types have connections with the J Family
11 Dâliyeh types have connections with the S Family

The numerous links with the CH Family may be left out of the picture for the moment, since we have already shown that the precise and detailed *nature* of these links places the Dâliyeh group in this Family, exactly as we should expect from its geographical location. What is significant statistically is that links with the northern Families are rare, while they are very numerous with the Jericho and Southern Families, i. e., 10 out of 13 types, and 11 out of 13 types, respectively. It is also interesting that 8 of the 13 Dâliyeh types have a linkup with *both* the Jericho and Southern Families, reinforcing the three-way relationship we have already noted several times above.

Another way of coming at the Family relationships of the Dâliyeh material is to isolate the most distinctive, or "diagnostic," types of this group. These few types provide the best criteria for distinguishing the group and understanding it in relation to other groups or regional assemblages, and they should, accordingly, be given greater weight in searching for parallels. Considering both form and decoration, the "diagnostic" types or features at Dâliyeh would certainly be: a) the distinctive "folded-envelope" ledge-handles on the ovoid storejars (Type 1a); b) the thumb-impressed bands on several types, equally distinctive (Types 1a-d; 9); c) the band-combing on several types (Types 1c, d; 3-5, 7, 8); d) the "holemouth" cooking pots. The parallels for these "diagnostic" features are *all* in Families J and S; a) and b) are Family J only, c) is primarily Family S, and d) is exclusively Families J and S. To add to this picture, which is entirely consistent, we should stress that those few connections that do exist with the northern Families are either sporadic and distant (the "holemouth" cooking pots), or else they are confined to types that have a country-wide distribution anyway and are thus relatively insignificant (the ovoid storejars, "teapots," and four-spouted lamps).

If it is clear that the Dâliyeh material belongs with Family CH, and its closest relationships otherwise are with Families J and S, it remains to assess the meaning of these relationships in cultural terms. To do this we must sketch the cultural history of the MB I period as a whole, *ca.* 2200-1950 B.C. Recent analysis shows that it may be best to understand the period in terms of overlapping regional assemblages, which probably point to a number of loosely affiliated groups of people with a common cultural heritage.[54] From what we know of their pattern of

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Dâliyeh deep lamp is from T. G31 at Jericho (*Jericho I*, Fig. 81: 6); elsewhere in the Jericho tombs there are dozens of both round-based and flat-based lamps.

[54] It must be stressed that the following is the writer's peculiar and perhaps controversial interpretation of the period, although we believe it to be warranted; see Dever, "Peoples of Palestine," pp. 198-226, and references there to other schemes. [Note the difference between this view and that of Paul Lapp, which he restated shortly before his death. The greatest disagreement seems to be over the origin of these people, with Dever maintaining the traditional view which identifies them as Amorites, whereas Lapp held that the successive

CHART I

	Dâliyeh Type	Family Comparisons	Context	Relative Date	At the Wâdī ed-Dâliyeh Context (Rooms)	Comment
1	*Ovoid Storejars*					
	a. "Env." Ledge-handles	NC, *J, CH	T, S	Early-Mid	*Situ*-2; Sherds-2	
	b. Funct. Lug-handles	NC, J, S	T	Early-Mid	Sherds-2, 5	1st occurrence in CH
	c. Vestig lug-handles	*S, CH	T, S	Mid-Late	Sherds-2, 5	
	d. No handles	*S, CH	T, S	Mid-Late	*Situ*-2; Sherds-5	
	e. Indeterminate	—	—	—		
2	*Small "Bottles"*	*J, *CH	*T, S	Early-Mid	Sherds-2	1st stratified examples anywhere
3	*Large "Bottle Amphoriskoi"*	J, *S	T, *S	Early-Mid	Sherds-2	1st occurrence in CH
4	*Large Cups or "Beakers"*	*S	S	Mid-Late	Sherds-4, 5	1st occurrence in CH?
5	*"Teapots"*	N, NC, J, *S, *CH	*T, S	Early-Late	Sherds-4	Among few stratified examples anywhere
6	*Small "Tumblers"*	J, S, CH	T, S	Mid-Late	Sherds-2	
7	*Combed Cups*	J, *S, CH	T, *S	Mid-Late	Sherds-2	
8	*Jars w/Everted, Flared Rim*	J, *S	S	Mid-Late	Sherds-2	1st occurrence in CH
9	*"Holemouth" Cooking Pots*	NC, *J, *S, CH	T, *S	Early-Late	*Situ*-2; Sherds-2, 4	1st whole examples anywhere
10	*Four-spouted Lamps*	NC, *J, *S, *CH	*T, S	Early-Late	*Situ*-2	

Chart showing the relation of Dâliyeh MB I pottery types to materials from elsewhere. In the column "Family Comparisons" N = Northern, NC = North Central, J = Jordan Valley/Jericho, S = Southern, C = Coastal, and CH = Central Hills; an asterisk marks especially important connections. Under "Context" T = Tombs, S = Stratified. *In situ* means "whole or restorable vessel(s) found *in situ*."

settlement and their way of life, these groups were semi-nomadic pastoralists who were in more or less constant movement and thus came into frequent contact, gradually being assimilated to each other in the course of the period. Their pottery, other artifacts, tomb types, and cultural affinities point to the fringes of Syria for the origins of these peoples. We may best connect them with the Amorites, steppe-dwellers who were known from numerous texts to have expanded over large areas of Northern Mesopotamia and Syria in the late third and early second millennium B.C. By careful analysis, particularly of the pottery, along the lines we have indicated it is even possible to reconstruct in some detail the routes by which these newcomers entered Palestine (see Pl. 44). The main route was certainly through northern Transjordan and the Jordan Valley. From here there was probably a diffusion of some elements into the Jezreel Valley and northern Palestine (Families N and NC); but the predominance of tomb groups and the scarcity of stratified deposits indicates that the earlier of these newcomers, arriving probably in the 22nd cent. B.C., did not settle permanently. Later movements show that the Transjordanian and Jordan Valley groups (Family J) moved, probably simultaneously, into the Central Hills and throughout all the Southern areas, particularly the Negev (our Families CH and S). This phase, which is represented by hundreds of small settlements, reflects a phase of sedentarization toward the end of the period (the 20th century B.C.), with a corresponding spread of a very homogeneous potttery.

2. *The Relative Date of the Cave II materials.*

How do the Dâliyeh materials fit into the hypothetical sequence which we have described, both chronologically and culturally? The extremely close connections of all Central Hills sites with Jericho, and especially the fact that certain types like the "bottles" are found *only* in these two areas, argues that Family CH is an offshoot of Family J. In fact, the sites of Family CH, Dâliyeh, Mirzbâneh, Bethel, Gibeon, and the Jerusalem group, at present constitute something of an enclave which may have been reached only via Jericho. It is worth noting that the Wâdī ed-Dâliyeh, opening out into the Jordan Valley just nine miles north of Jericho, would have provided a natural route; from this point up into the steep cliffs overlooking the Jordan Valley and to Cave II (ʿArâq en-Naʿsâneh) is but two or three miles. The fact that distinctive Family J features such as "envelope" ledge-handles and the "bottles" are still strongly present at Dâliyeh but become weaker as one goes farther up into the hills, would argue that the Wâdī ed-Dâliyeh was one of the early stages on a direct route from Jericho. However that may be, it is clear that the Dâliyeh MB I material is a derivative of Family J, which would place it sometime after the midpoint in the MB I chronological sequence, or *ca.* 2050 B.C.[55]

An independent analysis of the relative ceramic chronology would yield the same general date.[56] The maximum range of all types taken together is early-late, but most fall in the middle of the period, and there is in fact no type which that date would not suit (see Chart for summary). The earliest and one of the most useful features typologically is the large functional "folded-envelope" ledge-handle on the storejars. These handles occur elsewhere exclusively in the Jordan Valley and mostly in the northern

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population increments reaching Palestine during the EB-MB I period originated in Anatolia or farther north and east; see "Palestine in the Early Bronze Age," *Near Eastern Archaeology in the Twentieth Century*, ed. J. W. Sanders (Garden City, New York, 1970), pp. 117-120, especially p. 120. Perhaps some of Prof. Lapp's students will be able to present further evidence in support of his views, especially with the publication of materials from Bâb edh-Dhrâʿ.—N. L. LAPP]

[55] Whether or not this relative chronology, which rests on assumptions developed above, is acceptable, it should be noted that Lapp preferred approximately the same absolute dates. He regarded the Dâliyeh group as contemporary with the Mirzbâneh tombs and among the latest Central Hills groups, which would put it toward the end of MB I, i. e., not earlier than about 2050 B.C.; cf. Lapp, *Mirzbâneh Tombs*, p. 85, "Wâdī ed-Dâliyeh," *RB*, LXXII (1965), pp. 408, 409.

[56] While we have utilized the scheme cited in n. 54 above, for convenience, it could be abandoned and the relative chronology we have developed would still be valid, on the basis of comparisons with groups whose relative date is generally accepted.

reaches, i. e., early along the route of infiltration we have postulated. Moreover, typologically they are as early as EB IV and do in fact occur at transitional EB IV/MB I sites.[57] They provide us, therefore, a convenient *terminus post quem*. At the other end of the range, the band-combed wares are typologically later and they are especially characteristic of stratified sites in the south, which fall toward the end of the sequence we have assumed.

Given such a relatively wide chronological range in the Dâliyeh types, we have two recourses. We can opt for a compromise date somewhere in the middle of the period. Or we can assume that the group is stratigraphically mixed, and we can attempt to sort out typologically an earlier and a later group. Of course, it would be tempting to regard the sherds in Rooms 2, 4, and 5 (Pls. 5-13) as representing an earlier occupation, and the 21 whole or restorable pieces found *in situ* in Rooms 2 and 4 (Pls. 1-4) as coming from the final occupation, perhaps by a group representing a different Family. After all, we apparently do have such a situation at Jericho and Megiddo,[58] and it would explain the obvious mixtures, both of Families J and S and of types that are relatively early and late. Unfortunately, this raises even more severe difficulties, since the sherds are of band-combed ware and are among the *latest* pieces typologically, while the pieces found *in situ* are mostly " holemouth " cooking pots and storejars with " envelope-handles," among the *earliest* pieces typologically. Furthermore, there was not a mutually exclusive distribution: band-combed wares also occurred among the *in situ* pieces (Pls. 1: 3; 2: 11, 12; 3: 14), and " holemouth " cooking pot rims were found among the sherds in the interior rooms (Pls. 9: 7-15; 10: 1-12; 12: 7, 8). Finally, it is inconceivable that a group of 18 whole pieces clustered on the floor of Room 2 (Pl. 43) and found *in situ* could have been anything but contemporary, even though little absolute stratification was observed. Since the pottery is obviously an occupational deposit (below), including short-lived cooking pots, it cannot even be allowed a time-span of more than a very few years.

Regarding the dilemma posed by this apparent mixture of early and late ceramic types, we can only observe that at Iskander, Aroer and other sites in Transjordan with extremely close parallels to the Wâdī ed-Dâliyeh, the same mixture was noted.[59] It is well-known that we lack any firm basis for stratigraphic separation within MB I and that our sequential arrangement of the various MB I groups is based almost entirely upon typological assumptions.[60] It may turn out that the regional Families we recognize, while indisputable, are to be explained by factors more cultural and geographical than chronological. Specifically, we must allow for the possibility that increased knowledge of the material, and especially the future excavations of well-stratified sequences at borderline sites between the Families, will force us to compress our sequence drastically. It is even conceivable that nearly all of our MB I groups are contemporary, if the Dâliyeh evidence is taken at face value!

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[57] Cf. n. 10 above.

[58] It is generally accepted that the tomb groups and the stratified deposits at both Megiddo and Jericho are quite different from each other and reflect a cultural if not a chronological distinction. For details and references, see Dever, " Middle Bronze I," Fig. 2, p. 143, n. 10; " Peoples of Palestine," p. 203, n. 13.

[59] Cf. P. J. Parr, *ADAJ*, IV-V (1960), pp. 132, 133; E. Olávarri, *RB*, LXXVI (1969), pp. 256-259; Lapp, " Palestine in the Early Bronze Age " (n. 2 above), pp. 115, 116; Dever, " Middle Bronze I," n. 87.

[60] The chart, Fig. 2 in Dever, " Middle Bronze I," is an attempt to arrange all major MB I groups in relative sequence; it is based on a doctoral dissertation in which he sought to analyze typologically all ceramic, copper, and tomb types of the period. However, it must be cautioned that all such schemes are subject to radical revision if stratified evidence of a succession of MB I phases at a single site should be forthcoming. Thus far the closest thing to such a sequence is the supposed distinction between Stratum I and H at Tell Beit Mirsim, where Albright postulated the disappearance of the ledge-handle at the end of Stratum I (although he admitted that this distinction, obviously a typological rather than a properly stratigraphic one, was the only one observable). All such theoretical sequences should be used with utmost caution. It is of interest that more recently excavated sites, Iskander, Aroer, Jebel Qaʿaqīr and Har Yeruḥam, have produced two phases of MB I occupation. However, the pottery generally shows no differences between the two phases, and in any case none of these sites spans both the earliest and the latest groups, or the Transjordanian and the Palestinian groups, a necessity if we are to obtain a complete picture.

But until we have more clarification on this matter, we prefer to think in terms of overlapping typological stages—not a surprising phenomenon in itself—and to regard the Dâliyeh group as homogeneous, dating to about the middle of the MB I period, or *ca.* 2050 B.C.[61]

3. *The Significance of the MB I occupation in the Wâdī ed-Dâliyeh.*

We have stressed above that the MB I pottery from Cave II must be regarded as an occupational deposit rather than a tomb group. Negatively, there was no indication of a burial, whether bones or other evidence. The small lug-handled amphoriskoi, ubiquitous in tombs of Families CH, J and S, are conspicuously absent. Positively, the large storejars and especially the cooking pots in Room 2, the main deposit, indicate domestic occupation. Some of the large storejars had traces of scum lines indicating liquids (cf. Pl. 4: 21), so they must have been used for storing provisions. Cooking pots are almost never found in MB I tombs,[62] and the presence of such a great number of intact cooking pots certainly points to a domestic assemblage. Note also the " beakers," combed cups, and jars with everted flanged rim, all of which are more typical of or exclusively found in stratified deposits (cf. Chart).

There are a number of parallels for cave dwellings in MB I. In fact, a resurvey of the evidence suggests that the curious lack of house remains at many MB I sites may best be explained by assuming that people lived primarily in caves or other temporary dwellings. At Megiddo, Tomb 1101-02B Lower had a level of domestic occupation from EB III, and it is not unlikely that an MB I occupation preceded the mass burial in the upper levels.[63] At Ḥuṣn, inadequate recording makes it impossible to be sure, but again we seem to have an EB cave, reoccupied and then used for multiple burials in MB I.[64] In the south the situation is much clearer, though it is just beginning to be understood. It should be noted that most of the published MB I pottery from Strata I-H at Tell Beit Mirsim came from two large caves in SW 13 and 22/23.[65] At nearby Lachish, the " 1500 Area " is a vast complex some 500 yards northwest of the mound where there was only one poor MB I house, but numerous caves produced a mass of domestic pottery and other implements. Conclusive evidence for cave occupation in the southern Judean Hills comes from Jebel Qaʿaqīr, seven miles southeast of Lachish and six miles northeast of Tell Beit Mirsim.[66] In this extensive settlement stretching over the crest of a long ridge, only one rectangular house was found, but we located dozens of caves which had been occupied. The three caves that were excavated proved to be similar to the caves at Lachish and Tell Beit Mirsim, with curtain walls at the entranceway; cupmarks, jar-pots, storage bins and other domestic intallations; and quantities of pottery, as well as flints and stone utensils. It is noteworthy that the cave pottery included very large thumb-impressed storejars and cooking pots nearly identical to the Dâliyeh vessels.[67]

The significance of the MB I materials from Cave II in the Wâdī ed-Dâliyeh may be summarized as follows. In the first place, these materials provide a ceramic repertoire which is large and varied enough to assist us in characterizing the typical assemblages of the Central Hills (our Family CH), just beginning to be known. Several of the ceramic types (see Chart) are not only new for the Central Hills, but their appearance at the Wâdī ed-Dâliyeh is the first known occurrence anywhere in a stratified context. Secondly, the Dâliyeh MB I materials constitute the first *stratified* deposit we know from the Central Hills, with the exception of Bethel (which is not yet clear[68]). Thus they supplement the evidence from nearby MB I sites like Mirzbâneh and Gibeon, which have enormous cemeteries but no settlements from the period. In the third place, we can show from the Dâliyeh materials that *caves* were inhabited in MB I, which helps to confirm a pattern of domestic occupation that is significant but has only been recognized recently. That a small clan or tribe related to the Jericho peoples should have penetrated this remote and inhospitable region gives us some idea of how widespread and persistent occupation was in this elusive and little-known period.[69] Finally, it is striking that the Dâliyeh materials make up a small and homogenous group from a relatively inaccessible area, yet they have close affinities with *both* the Jericho/Jordan Valley and Southern groups. The mixture of these elements is the most indisputable evidence to date of the force of cultural assimilation in the MB I period.

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[61] Cf. n. 55 above.

[62] There are only two or three MB I cooking pot sherds reported from tombs, all of them probably accidental, either in fill or in soil washed into the tomb; for the only one the writer can cite, see *Mirzbâneh Tombs*, Fig. 18: 3 (T. A31). The cooking pots from T. 1101B Lower at Megiddo may be from an occupational deposit (cf. notes 41, 63 above).

[63] See *Megiddo Tombs*, pp. 26-27, where occupation is postulated down to the time of the multiple burial, i. e., early MB I.

[64] Cf. *PEFA*, VI (1953), pp. 1, 2; it is implied that there were cooking-pot sherds and sherds of storejars in both the early and later (MB I) groups, not published.

[65] For a cave in SE 13, cf. *TBM I A*, pp. 62, 63; Pl. 2, 3; for the cave in SE 22/23, cf. *TBM II*, p. 15, Pl. 49. Albright regarded these as merely storage caves, although he noted that they had " entrances lined with rude masonry " (exactly like the Jebel Qaʿaqīr caves; see below); cf. *TBM II*, p. 15; *BASOR*, No. 184 (Dec., 1966), n. 34.

[66] For preliminary reports on this site, see Dever, *RB*, LXXVI (1969), pp. 572-576; and especially " Middle Bronze I," pp. 146-147, Figs. 3, 4.

[67] The caves, C11, C12. and G26, will be published in the forthcoming final report of the 1967, 1968 and 1971 seasons.

Addendum

Since this chapter was completed in the spring of 1971, a number of new publications have appeared, several of them by the writer. While they expand the material available for comparison, they do not generally affect the interpretation advanced here except to provide further confirmation. Without attempting to update the present chapter completely or to give an exhaustive summary of the more recent literature, the following points may be noted. (1) For additional comparative material for the Central Hills Family, see Dever, "An MB I Tomb Group from Sinjil," *BASOR*, No. 204 (Dec., 1971), pp. 31-37; B. Shantur and Y. Labadi, "Tomb 204 at 'Ain-Samiya," *IEJ*, XXI (1971), pp. 73-77. New material for the North Central or Jezreel Valley Family, along with a valuable survey of the period, will be found in E. Oren, "The Early Bronze IV Period in Northern Palestine in its Cultural and Chronological Setting," *BASOR*, No. 210 (April, 1973), pp. 20-37. (2) To my geographico-cultural assemblages first presented in "Peoples of Palestine" (n. 2), I have now added another group, "Family TR" (Transjordan). This addition is based on new material from Transjordan; see R. Thomas Schaub, "An Early Bronze IV Tomb from Bâb edh-Dhrâ'": and Dever, "The EB IV-MB I Horizon in Transjordan and Southern Palestine," both articles in *BASOR*, No. 210 (April, 1973), pp. 2-19, 37-63. The recent appearance of some of the Iktanu material confirms the basic hypotheses concerning Family TR; see the very useful summary by the excavator, Kay Prag, in "The Intermediate Early Bronze-Middle Bronze Age: An Interpretation of the Evidence from Transjordan, Syria and Lebanon," *Levant*, VI (1974), pp. 69-116. Finally, Ruth Amiran's most recent statement of her division of the materials into "families," with the presentation of new evidence from near the Carmel Range, is found in "A Tomb from Geva'-Carmel," *'Atiqot* (1974), pp. 1-12 (Hebrew).

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[68] The only other stratified site from the period published to date from the Central Hills is Bethel, but the report by Kelso in *AASOR*, XXXIX (1969) leaves virtually every aspect of the MB I occupation in doubt. All that can be said is that there is probably an unwalled village on the site in MB I, with pottery very similar to Jericho, Tell Beit Mirsim, Lachish and other sites of our Family S, and now that we have the Wâdī ed-Dâliyeh for comparison, to Family CH. For a review article which attempts to reinterpret the "MB I" material published from Bethel, see Dever, "Archaeological Methods and Results: A Review of two Recent Publications," *Orientalia*, 40 (1971), pp. 459-471.

[69] Note that there is some evidence that Cave I in the *Wâdī ed-Dâliyeh* was also occupied in MB I. The pieces published here (Fig. 14: 1, 6, 7) are a large storejar with "envelope-handles" and two "holemouth" cooking pots; they are identical to the Cave II materials and are undoubtedy part of a contemporary occupation in MB I.

Chapter VI

THE ROMAN OCCUPATION AND POTTERY OF ʿARÂQ EN-NAʿSANEH (Cave II)

Nancy L. Lapp and George W. E. Nickelsburg, Jr.

I

Dio Cassius wrote concerning the grim toll of the Second Jewish Revolt:

> Fifty of their most important outposts and nine hundred and eighty-five of their most famous villages were razed to the ground. Five hundred and eighty thousand men were slain in the various raids, and the number that perished by famine, disease and fire was past finding out. Thus nearly the whole of Judaea was made desolate. . . .[1]

Although these statistics are unreliable,[2] there seems to be a kernel of truth in them: the revolt was of considerable proportions. Hitherto, however, archaeological evidence for occupation during the Second Revolt (A.D. 135) has been found *in situ* only in the caves of the Wâdī Murabbaʿât and other defiles and gorges of the Judean desert to the south of it. Thus ʿArâq en-Naʿsâneh, Cave II in the Wâdī ed-Dâliyeh, presents us with the first evidence *in situ* pertaining to the Second Revolt in northen Judea.

These second century inhabitants of Cave II probably fled from the Jordan Valley, or from the interior of Samaria as the Samaritan refugees had four centuries earlier. They brought with them weapons and tools, vessels of pottery and glass, personal effects, and even some keys to their buildings.

The number who found refuge in the cave is difficult to estimate. Evidence of second century occupation was found in Rooms 1, 2, 4, 6 and 7 and in suface exploration further back in the recesses of the cave (see Pl. 43). Parts of at least sixteen cooking pots and sixty-five storage jars from excavated areas suggest a sizable number of occupants. There is no hint of their fate. No graves or skeletons were found. When they left the cave, they left their keys, pottery, and other personal property behind. Perhaps they expected to return, or they may have left in haste for another refuge. Perhaps they were driven out and subsequently slaughtered.

II

During the second season of cave clearance at the Wâdī ed-Dâliyeh work proceeded into the second large room of ʿArâq en-Naʿsâneh (Cave II). In this area, Room 4 (Pl. 43), the evidence of occupation from the time of the Second Jewish Revolt was immediately apparent and so extensive[3] that the room became known as the "Second Revolt Room." George Nickelsburg was the field supervisor of this area and the two small rooms leading off from the northeast corner. Since the bulk of the Second Revolt pottery came from these areas the excavation and stratigraphy will be briefly described.

As shown on the rough plan, Pl. 43, access to Room 4 is through the narrow passageway (Locus 3) from Room 2. The room is approximately 17 meters wide, and 9 to 12 meters deep. The low, dome-like ceiling barely leaves headroom at its highest point. At the northwest corner a fall of large boulders blocks access to what may be a passageway to the north (Locus 17). At the northeast end of Room 4 a low opening leads to a small cubicle from which a low passageway leads east to the interior of the cave.[4] The first two small rooms beyond this second opening were cleared (Rooms 6 and 7).

In order to determine the stratigraphy of the cave, a trench was dug to bedrock at the northern side of the central portion of the room ("a" on Pl. 43) and a section was cut on its east side (See the accompanying figure and Pl. 57b). The six layers may be described as follows:

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[1] *Rom. Hist.* lxix. 14.1-2. The translation is that of E. Cary, *Loeb Classical Library* (Cambridge, Mass., 1955).

[2] J. Fitzmyer, "The Bar Cochba Period," in *The Bible in Current Catholic Thought*, ed. J. L. McKenzie (New York, 1962), p. 162.

[3] See above, pp. 11, 16.

[4] See above, pp. 11-12.

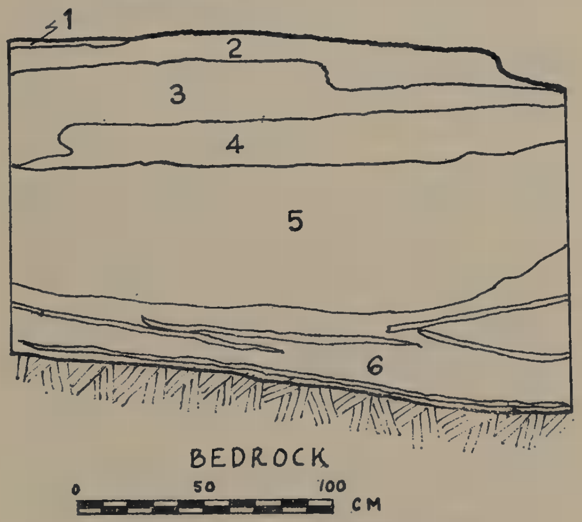
6. Residue left on the cave floor during the process of its formation, mixed with some layers of huwwar which fell from the ceiling. The precise line between bed rock and the bottom of Layer 6 was difficult to discern.

4-5. Barely distinguishable at some points. Probably a deposit that sifted down through crevices in the rock or washed in through the mouth of the cave.

3. Compact orange-red soil evidently the floor of the cave during its MB I occupation.

2. Fine powdery layer, often impossible to separate from the surface layer because of its soft consistency and because of recent and ancient disturbances in the cave. No Roman floor discernible.

1. Surface layer of bat excrement. This tended to fall into the trench so it had to be cleared away and hardly appears in the section.



Section A-A of Cave II, Room 4.

No sherds were found in Layers 4-6 either here or in another Room 4 sounding (Locus 25). An MB I pot (# 21) was set in a pit cut into Layer 3 and filled with the finer, soft soil of Layer 2. Layers 1 and 2 yielded a few MB I sherds, but mainly pottery of the Second Revolt.

The depth of deposits indicated by this trench was 1.25 meters. Locus 25, some four meters to the west, was also dug to bedrock and indicated a depth of 1.20 meters.

A trench was dug one-half to one meter wide along the east wall of the room. The first discovery was a pile of 90 beads ("b" on Pl. 43, Pls. 101b, 40). Less than a meter to the south a cache was found: a corroded knife blade, eight wooden handles belonging to elbow keys, and a bronze jug handle ("c" on Pl. 43; Pls. 57a; 32: 4; 33-35). Digging 25 cm. into Layer 3 along the north segment of the east wall uncovered no sherds.

Clearance to the north uncovered the large MB I pot set in a pit cut into Layer 3 (Pl. 43, # 21). A second pit, Locus 10, was detected two meters to the northeast ("d" on Pl. 43). In it were found a fragment of a wooden bowl (Pl. 31: 6) and a crushed Second-Revolt storage jar (Pls. 24: 4; 77). The large number of olive pits in and around it suggested the jar had once been filled with olives.

Layers 1 and 2 were removed from the entire room, thus clearing down to the MB I floor. The lower parts of two more large MB I pots were uncovered (Pl. 43, Nos. 19, 20), and the pit, Locus 25, contained mainly MB I sherds. The small cubicle to the north of the central section of the room (Locus 16) had a very low ceiling and the large amount of pottery and glass fragments indicates it was probably a dump.

Rooms 6 and 7, beyond the second opening from the northeast corner of Room 4, produced sixteen baskets of Second Revolt pottery the last three days of the dig. Room 7 yielded a marked sherd (Pl. 37: 2) on the last day of the clearance.

III

Following is a discussion of the Roman pottery of Cave II by type. Comparisons with other Second Revolt pottery are given, and in some cases an attempt is made to show developments from first century A.D. pottery.

Published Second Revolt pottery from Palestine to which much of the Dâliyeh material has affinities is given in preliminary reports from the

Caves of the Judean desert,[5] the final report of one of these caves—the Cave of Letters,[6] and the caves of the Wâdī Murabbaʿât.[7] The stratigraphy of these caves is not always clear so the basis for the use of these Second Revolt pottery groups must be briefly explained.

In the Cave of Horror (Naḥal Ḥever), a single stratum with Roman pottery was found between two layers of bat dung and its date fixed by four Second Revolt coins.[8] The pottery published is accepted here as coming uniformly from the Second Revolt.[9]

Excavators in the Cave of the Pool found it "impossible to distinguish" Chalcolithic, seventh-century, and Roman strata.[10] Two Second-Revolt coins provide a date for occupation during the Roman period.[11] All Roman pottery is here assigned to the Second-Revolt period.[12]

Coins and documents point to a sizeable Second-Revolt occupation in the Cave of Letters.[13] Yadin found no evidence of Roman occupation before the Bar Kokhba period.[14] The Roman pottery from this cave is accepted as coming from the period of the Second Revolt.[15]

In the Scouts' Cave (Naḥal Mišmar) in the Judean desert excavators found fragments of papyrus dated palaeographically to the period of the Second Revolt on a floor of stamped earth.[16] The Roman pottery found both in this floor and on another floor some 12 to 20 cm. below suggests to the excavator that the cave was used as a refuge during both the First and Second Jewish Revolts.[17] The report is not clear as to whether all the published pottery came from the upper floor.[18] The pottery will be considered here as possible but not certain second century A.D. material.

Coins and written material from the caves of the Wâdī Murabbaʿât indicate a slight occupation during the First Jewish Revolt and a heavier one during the Second.[19] The excavator, R. de Vaux, compared his ceramic finds to first and early second century A.D. material.[20] The pottery he publishes will be considered as possibly from the second century A.D.[21]

STORAGE JARS (Pls. 24-27, 77, 78)

One Roman storage jar from Cave II could be completely restored (Pls. 24: 4; 77). A second could be drawn to its lower curve (Pl. 24: 5), and a third, to the turn of the shoulder (Pls. 26: 4; 77). These jars are of the same ovoid form known from Qumrân II (A.D. 50-68) and the Roman pottery of Wâdī Murabbaʿât and the other caves of the Judean desert.[22] The other Dâliyeh rims with shoulders attached suggest a similar profile. One smaller jar, of which only the lower two-thirds has been preserved, has an inverted ovoid profile (Pls. 30: 1; 78). Parallels to this form occur in Qumrân Ib (50-31 B.C.) and II (A.D. 50-68),[23] although the latter jars are larger and their ring bases differentiate them from the Dâliyeh jar with its rounded base. Published Second Revolt materials include no parallels. There is no evidence from the Wâdī ed-Dâliyeh for ovoid or cylindrical jars with the pointed base popular during the first and second century A.D.[24]

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[5] *IEJ*, XI (1961), pp. 3-72 and Pls. 1-24; *IEJ*, XII (1962), pp. 166-262 and Pls. 15-48.

[6] Y. Yadin, *The Finds from the Bar Kokhba Period in the Cave of Letters, Judean Desert Studies* (Jerusalem, 1963). Henceforth *JDS*.

[7] R. de Vaux, *Les Grottes de Murabbaʿât*, Discoveries in the Judean Desert, II (Oxford, 1961). Henceforth *DJD II*.

[8] *IEJ*, XII (1962), p. 190.

[9] *IEJ*, XII (1962), pp. 191-194, Figs. 2-4. Storage-jar rims are thickened in a manner unknown in published first-century material. See below, p. 52. Lamps included both the bow-spouted variety and the short-nozzled type popular after A.D. 70 (*PCC*, p. 196).

[10] *IEJ*, XII (1962), p. 173.

[11] *IEJ*, XII (1962), p. 179.

[12] *IEJ*, XII (1962), p. 176, Fig. 5. The two published storage-jar rims are thickened, and the cooking pots parallel those in the Cave of Horror. The two bow-spouted lamps also find parallels in that cave.

[13] *IEJ*, XI (1961), pp. 36-52; *IEJ*, XII (1962), pp. 227-257.

[14] *JDS*, p. 112.

[15] *JDS*, *II*, Figs. 7, 8.

lished closely parallel examples from the Cave of Horror. Published lamps include two bow-spouted examples and three short-nozzled types. Many storage jars were found (p. 114) and illustrate the popularity of the thickened rim.

[16] *IEJ*, XI (1961), p. 27.

[17] *IEJ*, XI (1961), p. 30; *IEJ*, XII (1962), p. 216.

[18] *IEJ*, XI (1961). pp. 27-30, Fig. 1.

[19] *DJD II*, pp. 45-48.

[20] De Vaux cites parallels to the Murabbaʿât pottery from Qumrân II (A.D. 50-68), Qumrân III (to A.D. 135), material from excavations against the North Wall of Jerusalem (to the second century A.D.), forms from a Jewish tomb published by Sukenik (to A.D. 135), and some from Tulūl Abū el-ʿAlâyiq (to A.D. 70); see *DJD* II, pp. 29-31.

[21] *DJD* Figs. 41-43, Pl. 34. The six cooking pots pub-

[22] *RB*, LX (1953), p. 97, Fig. 2: 1, 3, 6; first or second century A.D. jars: *DJD II*, Fig. 7: 4-5; *IEJ*, XI (1961), p. 28, Fig. 1: 1; Second Revolt: *IEJ*, XII (1962), p. 176: 1, 2; p. 193: 1, 2, 5, 8.

[23] See *PCC*, Corpus 13 for drawings and references.

The rippled or ribbed surface is a familiar feature of large storage jars from the last part of the first century B.C. onward.[25] As is well-known, this characteristic develops until there is pronounced ribbing over the whole surface of later Byzantine jars.

The single feature that characterizes the Cave II jars as a homogeneous group is the thickening of the rims. Some first century A.D. jar rims show a slightly thickened tip,[26] but it is among the Second Revolt materials of Murabbaʿât, the Judean desert, and the Wâdī ed-Dâliyeh that one finds almost exclusively thickened rims.

The thickened rim was probably made by rolling the clay over and pressing it against the outside of the neck. Sometimes the tip was shaved as had been characteristic of first century A.D. jar and cooking-pot rims.[27]

The storage-jar rims illustrated in the plates are grouped by their profiles.[28] The first (Pl. 24: 1-3) are rounded and plain, and are among the few which do not show the characteristic thickening.[29] Most of the rims have a crescent shape dropping directly from the mouth at various angles (Pls. 24: 4, 5; 25; 26: 1-4).[30] In others the thickening comes more to a point (Pl. 26: 5-10).[31] The rims, Pl. 27: 1-7, have more square profiles. Finally, the thickening drops directly from the mouth and the profile is comparably long and thin (Pl. 27: 8-13).[32]

The long straight necks of the Dâliyeh storage jars vary between 4:5 to 8 cm. Many have a ridge at the base of the neck although it may not be as pronounced or as typical as in the first century A.D.[33] The long straight necks with a ridge at the base are characteristic of Second-Revolt storage jars from the Judean desert caves.[34]

A few typological developments regarding the large storage jars can be described. Early Roman (63 B.C.-A.D. 70) storage jars of this type had either collared rims,[35] simple unthickened rims, or thickened, usually everted rims.[36] There was often a distinct ridge or groove at the base of the neck. By the period of the Second Revolt, the collared rim has completely disappeared, and only a few examples of the unthickened rim are in evidence. The two types have given way to the thickened rim. The ridge at the base of the neck remains a feature of most of the jars. The diameter of the mouths and the length of the necks are about the same in the second century as in the first and ribbing continues to become more distinct.

JUGS AND JUGLETS (Pls. 28: 1-10; 79)

The wide-mouth jug with a concave base was typical in Late Hellenistic times. In the first century B.C. the necks tended to get narrower and bases more angular.[37] These developments seem to have continued, and by the second century A.D. narrow-necked jugs are found almost exclusively. The Wâdī ed-Dâliyeh jugs, Pl. 28: 1-3, are narrow-necked, probably of the type known from Qumrân,[38] Jerusalem,[39] and the Judean caves.[40] There are variations, however, in the rims and handles, and not many bases are preserved. The Dâliyeh jugs have a ridge at the base of the rim, which is not found on all parallels although a ridge slightly lower on the neck is common.[41] Some jugs have a small inside shelf which could have held a lid.[42]. The Dâliyeh rims lack this shelf although the concave interior line of the rims, 28: 2, 3, may preserve a trace of it.[43] The lower handle attachments of the Dâliyeh jugs are on the lower neck rather than the shoulder as with most of the other narrow-necked jugs, perhaps because the bodies are less bulbous. The base fragment, Pl. 28: 7, is a very angular development of the concave base.[44]

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[24] Qumrân: *RB.* LX (1953), p. 97, Fig. 2: 1, 3. Murabbaʿât: *DJD II*, Fig. 7: 1, 4-5. See also Yadin, *JDS*, p. 114, who says that all the jars from the Cave of Letters had "slightly pointed, nipple-shaped bases."

[25] For examples from 37 B.C.—A.D. 70 see *PCC*, Corpus 11.1.A-B and 12.D. The jars cited above from the Judean caves and Murabbaʿât usually indicate ribbing on the upper and lower parts of the body.

[26] *ʿAlâyiq*, Pl. 58: 33 (noted by P. Lapp, *PCC*, p. 15); from Bethel: *AASOR*, XXXIX, Pl. 70: 4-23 and p. 79 where P. Lapp states that thickened, everted rim tips seem to characterize first century A.D. rims of this type.

[27] *AASOR*, XXXIX, p. 79.

[28] The original grouping was made by Paul W. Lapp, but no notes were available to explain his arrangements. The discussion and parallels presented here are based on the work of George W. E. Nickelsburg, Jr.

[29] Six were noted among the Dâliyeh rims; three are illustrated here.

[30] Cf. especially *IEJ*, XII (1962), p. 176, Fig. 5: 1, from the Cave of the Pool, with Pl. 26: 3, 4.

[31] With Pl. 26: 10 cf. *DJD II*, Fig. 7: 2; *JDS*, Fig. 43: RC.2; *ʿAlâyiq*, Pl. 58: 29; and *QDAP*, X (1940), Fig. 14: 3. Considerable protrusions are found on other Second Revolt rims: *IEJ*, XII (1962), p. 193, Fig. 3: 3, 5 (cf. Dâliyeh, Pl. 26: 5); *JDS*, Pl. 34: 4.6.

[32] Cf. *IEJ*, XII (1962), Fig. 3: 4, especially to Pl. 27: 11, 12.

[33] Cf. *PCC*, Corpus 12; *AASOR*, XXXIX, Pl. 70: 6-23.

[34] *JDS*, Pl. 34: 59.12, 4.6, *IEJ*, XII (1962), p. 176, Fig. 5: 1, 3; p. 193, Fig. 3: 1-5, 8.

[35] For this type see *PCC*, Corpus 11.2.F, G.

[36] *PCC*, Corpus 11.1 and 12; *AASOR*, XXXIX, Pl. 70: 4-23.

[37] Cf. *PCC*, Corpus 21.1, 2; p. 16.

The jug rim and handle, Pl. 28: 4, is from the wide-mouthed type jug known in Late Hellenistic times and the first century B.C.[45] A fragment of what may have been a similar jug came from the Cave of Horror.[46] No close parallels to the jug and jug rims shown in Pl. 28: 5, 6, 8-10 have been found in the first and second-century A.D. materials.

BOWLS (Pls. 28: 11-16; 79)

There are no Second Revolt parallels to the large bowls, Pl. 28: 11, 12.[47]

Small rounded bowls with plain rims had been popular since at least the second century B.C.[48] The Dâliyeh specimens are of smooth, thin ware typical of the first half of the second century A.D.[49]

COOKING POTS (Pls. 28: 17-9; 29; 79)

The cooking pots from the Wâdī ed-Dâliyeh Second-Revolt occupation are of the globular type which has a long history in Palestine and was popular in the first and second centuries A.D.[50] Both the smooth ware (Pl. 28: 17-19) and the rippled ware (Pl. 29) appear in first and second-century parallels.[51]

Most of the Dâliyeh cooking pot necks are 2.5 cm. or shorter as is the case with pots from the Judean desert. The tendency toward a shorter neck had begun in the first century [52] and it is very characteristic by the second century A.D. The stance of the Dâliyeh necks is quite vertical, and the profile sometimes appears concave on the inside and convex on the outside (Pls. 28; 18; 29: 6, 7, 9). These features are typical of the pots from the Judean desert caves [53] but the concave-convex profile is rare in the first century A.D. A sharp differentiation between the neck and shoulder is characteristic in the first half of the second century A.D., whereas in the first century there had been some tendency toward a smooth transition.[54]

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[38] *PCC*, Corpus 21.1.R; 21.2.B and C.

[39] Sounding C at the North Wall (deposited shortly after A.D. 70," *PCC*, p. 55); *QDAP*, X (1940), p. 44, Fig. 20: 13; a *kokh* on the Mount of Olives (dated before A.D. 70), P. B. Bagatti and J. T. Milik, *Gli Scavi del "Dominus Flevit,"* Parte I (Jerusalem, 1958). p. 44; p. 127, Fig. 29: 4, 7.

[40] *IEJ*, XI (1961), p. 28, Fig. 1: 9, 10; *IEJ*, XII (1962), p. 191, Fig. 2: 14-21.

[41] *PCC*, Corpus 21.2.B, C; *IEJ*, XI (1961), p. 28, Fig. 1: 10; *IEJ*, XII (1962), p. 191, Fig. 2: 14-17.

[42] *PCC*, Corpus 21.1.R; *IEJ*, XI (1961), p. 28, Fig. 1: 9.

[43] There is hardly enough evidence to suggest that as the small shelf disappeared an exterior ridge developed at the base of the rim or lower on the neck. Of the two rims with small inside shelves (see preceding note), the Qumrân jug is from the first century A.D. as could be the jug from the Cave of the Pool (see p. 51 above), A ridge on the exterior is usual in the second century.

[44] Cf. the bases in *PCC*, Corpus 21.1. Also note *IEJ*, XI (1961), p. 28, Fig. 1: 9, and Bagatti and Milik, *op. cit.*, Fig. 29: 7.

[45] *PCC*, Corpus 21.1.F.Q.

[46] *IEJ*, XII (1962), p. 191. Fig. 2: 18.

[47] The only certain Second-Revolt large bowls published are from the Cave of the Pool (*IEJ*, XII [1962], p. 176, Fig. 5: 8-13).

[48] Cf. *PCC*, Corpus 51, 53.

[49] A bowl very similar to those from the Wâdī ed-Dâliyeh comes from the Cave of the Pool: *IEJ*, XII (1962), p. 176, Fig. 5: 14. From the Cave of Horror there are two shallow lids which have been published: *IEJ*, XII (1962), p. 191, Fig. 2: 9, 10; and from Murabbaʻât are some small deep bowls: *DJD II*, Fig. 8: 20, 24, 25.

[50] For first-century references, see *PCC*, Corpus 71.1. K^2-Q. For second century examples, see *IEJ*, XII (1962), p. 176, Fig. 5: 15-18; p. 191, Fig. 2: 5-8; *JDS*, Fig. 41. Those shown in *IEJ*, XI (1961), p. 28, Fig. 1: 5 and *DJD II*, Fig. 8: 16 may be from the first or second century.

[51] On first-century pots, see *PCC*, p. 19. Of the second-century pots cited in the previous note, the pots with smooth ware are: *IEJ*, XII (1962), p. 176, Fig. 5: 15, 16, 18, and p. 191, Fig. 2: 8.

[52] *PCC*, p. 20.

[53] Good examples are shown in *JDS*, Fig. 41. Note also *IEJ*, XII (1962), p. 176, Fig. 5: 15; p. 191, Fig. 2: 6, 8.

[54] *PCC*, p. 20; Corpus 71.1.N_1-Q.

First century A.D. cooking pots usually had rather plain, rounded rims, but by the period of the Second Revolt the rims were usually shaved or ridged (Pls. 28: 17, 29: 2-8). Sometimes the rim profiles became more detailed, probably as a result of the potter's fingers or shaving tool (Pl. 28: 18, 19; 29: 9-11). The Judean cave cooking pots show a similar variety of treatment.[55]

Most of the pots have thin strap handles that loop up higher than the rim of the vessel. Although this has previously occurred to some extent in globular cooking pots, in the second century A.D. the loop is consistently higher—perhaps partly due to the shorter necks.

It is thus possible to suggest some typological developments in the globular cooking pots from the first half of the second century A.D. The tendency toward ribbing continued. Necks have continued to become shorter, and there is now almost always a sharp differentiation between neck and shoulder. The neck often has a concave interior and convex profile which rarely occurred before the second century A.D. The rather plain cooking pot rim typical of the first century A.D. has usually become shaved or ridged, sometimes resulting in a comparatively elaborate profile. The thin strap handles loop above the rim consistently in the second century A.D.

LAMPS (Pls. 30: 2-3; 78)

Two types of lamps are represented in the Second-Revolt ceramic material from the Wâdī ed-Dâliyeh. Both, the decorated bow-spouted (Pl. 30: 2) and the short-nozzled (Pl. 30: 3), were found in the Cave of Horror and the Cave of Letters.[56]

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[55] Cf. *JDS,* Fig. 41; *IEJ,* XII (1962), p. 176, Fig. 5: 15-18; p. 191, Fig. 2: 5-8.

[56] Decorated bow-spouted: *IEJ,* XII (1962), pp. 193-194, Figs. 3: 10; 4: 2; *JDS,* Fig. 42: CD.1, RC.4. Short-nozzled: *IEJ,* XII (1962), p. 193, Fig. 3: 13, 14; *JDS,* Fig. 42: B.1, 3.1, II.12. Those just cited, from the Cave of Letters, are decorated.

Chapter VII

OTHER FINDS

OTHER POTTERY

Nancy L. Lapp

The main periods of occupation in the Wâdī ed-Dâliyeh caves were the end of the Persian period for Cave I and Middle Bronze I and Second Revolt times for Cave II, and it is to these periods that most of the pottery and artifacts belong. However, a few sherds indicate occupation by passing campers or shepherds during several other periods. Certainly no stratification of other periods was observable, but the few typical sherds found in such small secluded areas as these caves might caution archaeologists about excluding periods of occupation from tells and declaring odd sherds intrusive.

MB II B-C (Pls. 14-16: 4)

A few sherds from the MB II B-C horizon were found in Caves I and II. They must represent squatter occupation, and most forms should only be dated broadly to MB II B-C.[1]

The storage jar, Pl. 16: 1, has the typical MB II B-C shape: ovoid body coming almost to a point at the slightly flattened base, with two handles just below the shoulder. The rim is probably a degenerate variant of the usual ridged or profiled rim.[2] Pl. 15: 1 shows part of the neck and body of a dipper juglet, a typical MB II B-C. form.[3] Pls. 14: 2 and 3 are fragments from piriform juglets: Pl. 14: 2 the bottom stubs of a triple handle[4] and 14: 3, a small ring base.[5]

Pls. 15: 2 and 16: 2 represent platter bowls with simple, slightly inverted rim and concave bases.[6] Flaring carinated bowl fragments are represented by Pls. 14: 4, 5; 15: 3, 7, 8; 16: 3. Ring and flat bases are represented.[7]

Cooking pots with molding near the rim, Pl. 15: 5, as well as molding at the rim, Pls. 15: 6, 14: 8, are represented. It is thought that the raised band moved closer to the rim when the holes above it disappeared, until by MB II C the band was at the very edge of the rim.[8] Pl. 16: 4 has the form of a heavy bowl but is of cooking pot ware and probably represents an unusual MB II B-C cooking vessel.

Most lamps in MB II have rounded bottoms with slightly pinched nozzles, but there are some examples with flat or disc bases, from MB II B-C contexts, which are like the Wâdī ed-Dâliyeh example, Pl. 15: 4.[9] One very close parallel should especially be noted; it is from the latest group of MB II B-C tombs at Jericho.[10]

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[1] Thanks are due to Professor William Dever for help in finding some parallels to these sherds and especially for references to the Shechem material, unavailable to the writer.

[2] Cf. *TBM I A*, Pl. 6 (Stratum E), 14: 4-14 (Stratum D); *Jericho I*, Figs. 183: 2 (Tomb J 7), 190: [illegible] (Tomb G 1), 196: 2, 3 (Tomb H 6), 213: 3, 4 (Tomb H 18); *Gibeon*, Fig. 43: 8, [illegible] (Tomb 39); *AASOR*, XXXIX, Pl. 49: 12-14 (Bethel, probably MB II B-C); *Meg. II*, Pl. 27: 8 (Stratum XII).

[3] *Hazor I*. Pl. CXX: 4-6, 9-12 (Area D, Stratum 4); *II*, Pl. CXI: 1-5 (Area C, Stratum 3); *TBM I*, Pls. 42: 9, 11-14; 43: 5, 7; *I A*, Pl. 15: 7-11 (Stratum D); numerous in MB II Gibeon tombs, e. g. *Gibeon*, Fig. 23: 70-84; see examples listed from Jericho tombs, *Jericho I*, pp. 287-289, *II*, pp. 192-193.

[4] Cf. *Jericho I*, Fig. 142: 2 (Tomb A 34), *II*, Figs. 98: 5 (Tomb B 48), 153: 7 (Tomb J 14); *Hazor I*, Pls. CXII: 20 (Area D), CXXI: 20 (Area D, Stratum 4).

[5] Cf. *Jericho I*, p. 282, *II*, p. 187; *Hazor I*, Pl. CXXI: 3 (Area D, Stratum 4), *II*, Pl. CXI: 11 (Area C, Stratum 3); *Gibeon*, Figs. 22: 59, Tomb 15), 30: 10-12 (Tomb 22), 41: 20 (Tomb 36).

[6] *Gibeon*, Figs. 9: 13, 16, 17; 10: 19 (Tomb 10B); *Hazor I*, Pl. CXIX: 1-12 (Area D 5, Stratum 4); *II*, Pl. CIX: 2-4 (Area C, Stratum 3) *TBM I*, Pl. 44: 7-9 (Stratum D); *I A*, Pls. 10: 5 (Stratum E), 12: 14 (Stratum D); *Jericho I*, p. 271, *II*, pp. 176-178); *Meg.* II, 37: 26 (Stratum XI, T. 3080). At Shechem they are found in MB II B-C contexts according to the field supervisors, D. Cole and J. Seger.

[7] Cf., e. g., *Hazor I*, Pl. CXIV: 10, 13 (Area D5, Stratum 5); *Gibeon*, Figs. 16: 5 (Tomb 11), 20: 28-29 (Tomb 15); *Jericho I*, pp. 274-275, *II*, p. 180; *Meg. II*, Pls. 36: 22 (Stratum XI), 28: 17 (Stratum XII, T. 4102); at Shechem, MB II B-C according to Cole and Seger.

[8] *TBM I*, p. 24. According to Cole and Seger, at Shechem the molding near the rim is normative for MB II B and at the rim only in MB II C. For molding near the rim cf. *TBM I*, Pl. 44: 13 (Stratum D); *AASOR*, XXXIX, Pl. 51: 14 (Bethel, MB II B-C). For molding at the rim, cf. *TBM I*, Pls. 8: 5; 10: 18, 23; 11: 12, 13, 15, 17; 43: 9; 44: 10-12 (Stratum D); *I A*, Pls. 13: 3-6 (Stratum D); 11: 8; 24: 18 (Stratum E).

Iron I Pottery from Cave II (Pl. 16: 5-7; 17: 1-3)

The Iron I period is represented by a number of cooking-pot rims from Cave II. That only cooking-pot sherds were found from this period may reflect overnight campers who broke some of their camping equipment, perhaps at a regular stopping place over a period of years. Similar rims are common at sites with heavy Iron I occupation.[11]

Iron II Pottery from Cave I (Pl. 17: 4-8)

From Cave I came a number of Iron II sherds, probably from the end of the Iron II period.[12] Pl. 17: 4 is a form of the cooking pot comparable to those from Samaria Period VI.[13] The jar, bowl, and cooking-pot rims (Pl. 17: 5, 6, 8) are all typical Iron II forms with numerous parallels.[14] The false-spouted jug (Pl. 17: 6) has parallels in Hazor V_A and VI, Tell Beit Mirsim A, and other sites.[15]

Roman Pottery from Cave I (Pls. 23: 4-6 and 76c)

A storage jar that dates from the first century B.C. could be almost completely reconstructed. This is the only vessel at the Wâdī ed-Dâliyeh from this time, but these large cylindrical jars with long collared rims are typical of first-century B.C. and first-century A.D. deposits.[16] Closest parallels to the Wâdī ed-Dâliyeh jar can probably be found at Bethel. There phrase 2 rims are dated 135-63 B.C. and phase 3 rims, 4 B.C.-A.D. 69.[17] The Wâdī ed-Dâliyeh jar may fall just between these two periods.

The rim has lengthened considerably from earlier types and there is a slight eversion at the top of the rim. But the ware is still thicker than in first-century A.D. forms and there is not yet the distinct ridge at the base of the neck. Second-century jars of the Second Revolt (Pl. 24) are bell-shaped with thickening at the rim.

The other jar rim, Pl. 23: 5, as well as the cooking-pot fragments, Pl. 23: 6, probably belonged to the Second Revolt occupants of Cave II. For their typology and parallels see the discussion of Pl. 24-27, 28: 17-29: 11, pp. 51-54 above.

ʿAyyubid-Mamluk Pottery from Cave II (Pl. 30: 4-6)

Occasionally Arab sherds turned up in the debris of Cave II. Shown are three typical painted sherds of geometric design. They date from the ʿAyyubid-Mamluk period, 11th-14th centuries A.D.[18]

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[9] *Hazor I*, Pls. CII: 1 (Area D, Stratum 2), CIII: 23. 26 (Area D, Stratum 1); *II*, Pl. CXV: 1, 2 (Area C, Stratum 3); *Gibeon*, Figs. 41: 34, 35 (Tomb 36), 62: 33 (Tomb 57); *Jericho I*, p. 291 (disc base); *II*, p. 195 (especially Fig. 225: 11).

[10] *Jericho I*, Fig. 219: 9 (Tomb H 22).

[11] Hazor XII (see *Hazor III-IV*, Pls. CLXV, CCI: 12, 14-16; Megiddo VI (see *Megiddo II*, Pl. 85: 12-16); TBM B_2 (see *TBM I*, Pls. 28: 17-20, 30: 39-43, 45).

[12] In a letter to Professor A. Malamat of February 4, 1970, Mr. Lapp indicated that he would relate the few late Iron II sherds from Mughâret Abū Shinjeh to Prof. Malamat's suggestion ("The Last Kings of Judea and the Fall of Jerusalem," *IEJ*, XVIII [1968], p. 155) that fugitives from the destruction of Jerusalem in 586 B.C. may have taken refuge in caves, as suggested by Ezekiel's prophecy (Ezek. 33: 27).

[13] Cf. *SS III*, Fig. 9: 10-17, and p. 121, where it is suggested that they are developments of LB and I_1 cooking pots.

[14] E. g., for Fig. 17: 5, cf. *Hazor II*, Pl. LXXI: 11, LXXXIX: 1-10 (Hazor IV, V_A), *SS III*, Fig. 11: 24 (Samaria VII) *Megiddo I*, Pl. 15: 75-77; for Fig. 17: 7, cf. *Hazor II*, Pl. LXXXI: 14-28 (Hazor V), *AASOR*, XXXVIII, Fig. 17: 12, 13 (Beth-zur III); for Fig. 17: 8, cf. *AASOR*, XXXVIII, Fig. 19: 1 (Beth-zur III), *TN II*, 1012, 1013, 1019; *AS IV*, Pl. LXIV: 20-24.

[15] *Hazor II*. Pl. LXXXIX: 11, LXXIV: 3; *TBM III*, Pl. 15: 17, *I*, Pl. 53: 1, 3, and references, *III*, p. 146, p. 80.

[16] Cf. *PCC*, Corpus 11.2.E-G and 12 (p. 152, read Type 12 for Type 11).

[17] Phase 2 rims: *AASOR*, XXXIX, Pl. 69: 13-23; phase 3 rims: Pl. 70: 2-24. A full discussion of the development of the "squared" rim by Paul Lapp is found in the publication of the Bethel pottery, *AASOR*, XXXIX, pp. 78-79. For dating of the Bethel Hellenistic and Roman phases see p. 77.

[18] Thanks are due to Professor Oleg Grabar of Harvard University for help in identifying these sherds. For similar pottery see R. de Vaux and A. M. Steve: *Fouilles à Qaryet el-ʿEnab—Abū Gôsh, Palestine* (Paris, 1950),

COINS

FRANK MOORE CROSS, JR.

Of particular importance for the date of the Mughâret Abū Shinjeh (Cave II) deposit are the coins recovered from the site (Pls. 80-81). While all but one of these came from bedouin excavation, there is no doubt whatever as to their provenience.[19] All date from immediately before the conquest of Alexander in 332 B.C.[20]

One of the coins is an Attic tetradrachmon of a developed type attributed to the time of Philip II, father of Alexander the Great (No. 1). Another (No. 2) is a silver stater of Persic standard minted by Mazday (Mazaeus), late in his tenure as satrap of Cilicia, no later than the reign of Darius III (336-331 B.C). Two small silver coins came into the hands of Professor Lapp, one (No. 6) found in his second season of excavation, one by purchase (No. 5). Both were sixteenth-of-a-sheqel pieces (trihemiobole-Phoenician). No. 5 was a coin of the class "Philisto-Arabian," a rather unfortunate designation which includes the fourth-century coinage of Judah; it is a coin minted in Palestine imitative of Attic coinage, with a head of Athena on the obverse, an owl and inscription AΘE on the reverse. It dates from the middle third of the fourth century. The other coin (No. 6) belongs to the type issued in Sidon in the fourth century. It is either a coin of Straton II (343/2-332) or a Palestinian imitation of the Sidonian coin in question; it is well known that in fourth-century Palestine many coins patterned after the Sidonian coinage were struck.

Another coin, of which there were a number of identical examples (Nos. 3 and 4),[21] is a well-known Tyrian didrachmon whose date has been disputed in the past. On the obverse is a divinity (Hercules-Milqart) astride a hippocamp above a double line of stylized waves, beneath which swims a dolphin. On the reverse is an Athenian owl, and representation of Egyptian royal symbols and crook and flail. On the right of the owl is the Phoenician letter *ʿayin* and the number "15."

As late as 1957 Henri Seyrig, the distinguished French numismatist, still argued that these Tyrian coins were post-Alexandrine.[22] The chief argument was from the fact that the coin was minted on the Attic standard rather than on the Phoenician standard; the shift of standard, it was maintained, reflected the coming of Alexander. It is true that in other Phoenician cities, notably Aradus and Sidon, shifts were made from the Persic or Phoenician standard to the Attic with the conquest of Alexander. However, the analogy between the shifts of standard is not perfect. The coins of Aradus and Sidon of Attic standard were Alexandrine coins, not independent issues of royal mints. With Alexander's coming the latter became excessively rare in Phoenicia, Syria, Palestine and Cyprus. From this point of view coins of our type, belonging to independent royal issues would be strange [23] and quite puzzling after Alexander's destruction of the city.

It is a well-known fact that the Attic standard was not first introduced into the Levant by

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p. 133 and Pl. F; O. Grabar, J. Perrot, et al., "Sondages à Khirbet El-Minyeh," *IEJ*, X (1960), pp. 238 and Pl. 30: 2-11.

[19] Virtually everything offered for sale as coming from the Wâdī ed-Dâliyeh did in fact come from the cave. There were two notable exceptions, some Greek and Hebrew inscriptions on ribbed Roman ware obviously pilfered from the excavations at Herodium, and a cigarette box of tiny fragments of papyri in Greek and cursive Aramaic, almost certainly left over from Taʿâmireh digs in the Wâdī Murabbaʿât. However, the latter was designated as a separate lot by the representative of the bedouin from the beginning, and later, on being sharply questioned, he admitted that its provenience was uncertain. The only alternate possibility is that these few fragments from Jews of the Second Revolt against Rome were recovered from Cave II in the Wâdī ed-Dâliyeh where the bedouin also dug, and which, when excavated by Professor Lapp's expedition, yielded magnificent MB I pottery, but also an important occupation dating to the Second Jewish Revolt. No remains of documents turned up (with the exception of grafitti on jars).

[20] For precise identifications of the coins, see below pp. 58-59. For a discussion of the Second-Revolt Coin from Cave II, see below p. 102.

[21] I have seen five specimens from the Wâdī ed-Dâliyeh, only one of which we acquired for the Palestine Archaeological Museum with the lot of papyri. Reports of the middleman, Khalil Iskander Shaḥin, indicate that a large hoard was found in the cave. The hoard was broken up, however, and sold to private collectors.

[22] "Antiquités syriennes: sur une prétendue ère tyriene," *Syria*, XXXIV (1957), pp. 93-98.

[23] The closest analogy I know is the shift in Mazaeus' coinage from Persic to Attic standard which presumably took place when he moved from his satrapy in Cilicia to Mesopotamia, and from the suzerainty of Darius to that of Alexander.

Alexander. It was the prevailing standard at Gaza and Judah in the fifth and fourth centuries and seems to have been known also in Syria and Phoenicia before Alexander.[24] There is no *a priori* reason why Tyre could not have shifted to the Attic standard before Alexander.

Henri Seyrig has, I believe, made one important contribution to the discussion of this Tyrian coinage. He argues conclusively that this coin and others of similar series bear the abbreviation of the king's name and his year number. This has precise analogies in pre-Alexandrine coinage of Phoenicia as well as in Alexander's coinage from Phoenicia. He rejects attempts to date the series by a putative era of Tyre as well as the notion that these coins were issued contemporaneously with Alexandrine types which probably began about 306 B.C. at Tyre. Rather he refers the coins to the period 332 B.C. to 307 B.C., immediately after the fall of Tyre to Alexander. But from all we know of Alexander's relations with Tyre, it is the last city we should expect to be granted immediate permission to issue an independent coinage. Tyre alone of the Phoenician cities opposed Alexander. The siege of Tyre which lasted from January to July/August 332 B.C. was notorious for the atrocities committed by the Tyrians against Macedonian prisoners, and for the fierce vengeance exacted by Alexander when the city fell. A reported eight thousand were killed, thirty thousand sold into slavery. Tyre was then reconstructed as a Macedonian fortress.[25] There is a notice also that Philotos was made military governor of Tyre.[26] While the king of Tyre was spared when he took refuge in the Milqart (Herakles) temple, there is no evidence which can stand scrutiny that the monarchy was shortly restored by Alexander.[27]

There are very good reasons for shifting these Tyrian coins to the period immediately before Alexander. The context in which they were found at the Wâdī ed-Dâliyeh is sufficient evidence. However, there is more. At Tell Abū Hawâm a large hoard of Tyrian coins was found. There is a sequence of about 109 coins including the owl series of Phoenician standard, and the series of Attic standard. But despite its proximity to the great Alexandrine mint of ʿAkko no Alexandrine coins were found with the hoard. A second hoard from Tell Fukhkhâr has been published since the Dâliyeh discoveries which shows the same pattern: Tyrian owls of Attic standard are found only in pre-Alexandrine contexts.[28] There seems to be every reason to attribute them to Azemilkos,[29] the last king of Tyre before Alexander, whose Semitic name begins precisely with *ʿayin*, the abbreviation of the king's name on the Tyrian pieces. Azemilkos ruled seventeen years, if these coins were his, and the Dâliyeh hoard belongs to the fifteenth year, 334 B.C.

Descriptions of the Coins

No. 1. Attic Silver Tetradrachmon. Weight 17.13 g. Epoch of Philip II of Macedon (359-336 B.C.).

Obverse: head of Athena r.; eye in profile. Round earring, and fitted, crested helmet.

Reverse: owl r., wings closed. Crescent and olive spray and berry in l. field. Inscription: AΘE.

Cf. J. N. Svoronos, *Trésor de la numis-*

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[24] An example is the ʿAbd-Hadad coinage of Hierapolis (Bambyce); cf. E. Babelon, *Catalogue des monnaies grecque . . . Les perses achéménides etc.* (Paris, 1893), p. 45. See also G. F. Hill, *Catalogue . . . of Phoenicia* (London, 1910), p. xxiii, who discusses a unique coin of Aradus which appears to be of Attic standard.

[25] Cf. W. W. Tarn, *Alexander the Great* (Cambridge, 1951), I, p. 40.

[26] Q. Curtius Rufus, *Hist. Alex.* (ed. E. Hedicke), iv, 5, 9.

[27] Two passages have been cited in this connection, Diodorus Siculus xvii.47.1 (ed. Dindorf), and Justin, Epit . . . Trogi xviii.3.18-19 (ed. O. Seel). Both confuse kings of Sidon with Tyre, notably Straton. Cf. G. F. Hill's terse refutation of the argument that the monarchy survived in Tyre, *Catalogue of the Greek Coins of Phoenicia*, p. cxxiv. n. 3. On the questionable character of Justin as a source, see Tarn, *Alexander the Great*, II, pp. 122-133.

[28] See A. Kindler, "The Mint of Tyre—the Major Source of Silver Coins in Ancient Israel" (in Hebrew), *Eretz-Israel*, VIII: *E. L. Sukenik Memorial Volume* (Jerusalem, 1967), pp. 318-325; Pl. 1A. Kindler has come to the same conclusion, that these coins be raised in date to the period before Alexander. Somehow, however, he has missed my discussion of the Dâliyeh coins, *Biblical Archaeologist*, XXVI (1963), pp. 116-118. He argues the case primarily on the basis of the Tell Abū Hawâm and Tell Fukkhâr hoards. He also records a point which escaped me, namely that M. Narkiss as early as 1939 argued for a pre-Alexandrine date for this Tyrian owl series.

[29] Arrian, *Anab. Alex.* ii.24.5; ii.15.6.

matique grecque ancienne I: Les monnaies d'Athènes (Munich. 1923-4), Pl. 19, 30.

No. 2. Silver Stater of Mazaeus. Weight, 10.32 g. From late in Mazaeus's tenure as satrap of Cilicia (361-333 B.C.).

Obverse: *bʿl trz* in Aramaic script. The god is portrayed seated on the *diphros*, a *himation* over his legs. The head and upper body to front. In his r. hand is an eagle; in his l. hand a scepter with a lotus head. In the field l. a sign resembling Phoenician *reš*. Cable border.

Reverse: *mzdy* in cursive Aramaic script. Lion attacking to l.; a bull is under assault, kneeling to l. *sm* in Aramaic script in field below. Linear border.

Cf. G. F. Hill, *Catalogue of Greek Coins in the British Museum: Lycaonia, Isauria, and Cilicia*, No. 58, p. 172 and Pl. XXXI, 2.

Nos. 3 and 4. Silver Didrachmon of Tyre. Weight 8.74 g.

Obverse: Milqart or Baʿl Shamêm on hippocamp holding a bow in l. hand. Below is a double line representing waves; a dolphin is visible below waves on No. 4. Cable border.

Reverse: Owl with Egyptian crook and flail; in r. field the Phoenician letter *ʿayin* and number: 10.111 11 (fifteenth year of ʿAzemilk).

Cf. Hill, *Catalogue . . . Phoenicia*, No. 40, p. 232; Pl. XXIX, 16 (year 14).

No. 5. Silver $\frac{1}{16}$ sheqel (trihemiobole). Weight *.6 g.*

Obverse: head of Athena, badly worn.
Reverse: Owl, wings closed. Inscription: Α r. below; Θ to l. of Α and above; Ε below l. Amphora between Θ and Ε. Incuse square.

Cf. Hill, *Catalogue . . . Palestine*, No. 5, 6, p. 183 (Pl. XX, 5, 6 [Egypto-Arabian]) No. 4, p. 177 (Plate XIX [Philisto-Arabian]).

No. 6 Silver $\frac{1}{16}$ of sheqel. Weight *.5 g.*
Obverse: mutilated. Vague lines fit with portrayal of waves and galley.

Reverse: King of Persia holding rampant lion in l. hand. R. hand holds a drawn scimitar. Phoenician letters *ʿayin* and *bêt* are faintly legible in field between royal figure and lion. The inscription reads up.

The coin is to be identified as Sidonian from the reign of Straton II, or as a Palestine imitation of the Sidonian series.

Cf. J. Babelon, *Traité des monnaies grecque et romaines*, II, 2, pp. 595-607. (Coins of Straton II and imitations in Palestine and Egypt.) *Catalogue de la Coll. de Luynes: Asie mineure et Phénicie* (Paris, 1930), No. 3182 (Pl. CXV), and especially 3252-3258 (unidentified coins patterned after the late fourth-century Sidonian style); J. Rouvier, "Les rois phéniciens de Sidon," *Revue numismatique*, VI (1902), pp. 421-451 (Pls. VIII, IX).

SCARAB

Frank Moore Cross, Jr.

The scarab (Pls. 81 and 36: 11) is without precise parallels, to our knowledge.[30] However, most of the individual elements are well known in Egyptian and Phoenician Egyptianizing glyptic. There appears to be no reason to separate it from its fourth-century B.C. context.

On the left is the figure of a goddess wearing the crown of Hathor (the abacus of the Hathor capital).[31] She stands in a traditional posture, her right hand to her side, holding (vestigial) *ʿanḫ* presumably.[32] On the right, opposite the face of the goddess, are degraded hieroglyphs: *nfr*(?) *t*(?)*r*ʿ and (below forearm) *nfr*(?). In front of the goddess, lower down, is a conventionalized representation of an incense altar.[33] On the bottom right is a poorly executed papyrus flower and bud.

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[30] We are grateful to Père B. Couroyer for his comments on the scarab (letter of June 7, to Paul W. Lapp), and for many of the parallels cited below.

[31] Cf. I. E. S. Edwards, "A Relief of Qudshu-Astarte-Anath in the Winchester College Collection," *JNES*, XIV (1955), pp. 49-51; and Pl. IV. This headgear is well known in representations of Tannīt in the Punic West. Compare also the ivory figurines from Megiddo *apud* H. Frankfort, *The Art and Architecture of the Ancient Orient* (London, 1958), Pl. 151: A and B.

[32] For the posture, dress, and *ʿanḫ*, see the female goddess on one of the steles from Bethshan in the Palestine Museum, reproduced in J. Gray, *The Canaanites* (London, 1964), Pl. 23; Père Couroyer calls our attention to the dress and posture of goddesses portrayed in G. Contenau, *La Glyptique syro-hittite* (Paris, 1922),

Below the figure of the goddess is a pedestal[34] which may be taken as the platform for the Horus name. The Horus hawk is displaced to the right if this is the case. Hawks are not infrequent on scarabs[35] and this juxtaposition may be coincidental.

The object held in the hand of the goddess is problematic. Tradition suggests a lotus flower, a flail, or a fan; the first-mentioned is to be preferred.

TEXTILES

Elisabeth Crowfoot

The textiles from the Wâdī ed-Dâliyeh are of considerable interest as the first collection from Palestine that may be attributed to the last few centuries B.C., until this discovery almost a blank in the textile record. It is true that material from another occupation is present, but recent dated finds of fabrics of the Roman period, particularly those from Dura-Europos and the " Cave of Letters " in the Judean desert (from the Second Jewish Revolt), have made it possible to identify some pieces as belonging to the small layer of the early second century A.D., while the fortunate preservation of a fragment of textile still adhering to one skeleton allows us to suggest that others belong to the period of the Samaritan refugees.

Of the fifty-nine woven pieces catalogued there are thirty-six of linen, twelve of wool, five from tent fabrics using wool, linen and camel-hair, three heavy braids associated with them, and three pieces employing cotton. Of the Cave I textiles the linens include most of those identified as belonging to the Samaritan occupation and some pieces of Roman date; most of the woolens, and perhaps the tent fragments, can be assigned to the Roman period; of the scraps using cotton, two must be modern. Three linen and two woolen fragments from Cave II must be of the Roman period.

All the material was in a poor state of preservation; it was very dirty, but too delicate to stand more than minimum cleaning. With fragments so torn, stained, and pulled, it is possible that some which should belong together no longer bear much resemblance to each other, and though in some cases scraps have been grouped with others which may come from the same fabric it is likely that the numbered pieces of the catalogue represent fragments from many more garments and cloths, especially in the case of the undecorated linens.

Among the textiles for which a Roman date is suggested wool and linen are not mixed, though one fragment of wool which could belong with them is sewn with linen threads (no. 45). Among the fine linens tentatively assigned to the earlier occupation this rule does not hold; three pieces of linen have decoration of coloured bands in fine wool. These have been dealt with in the section on Linens.

Identification of fibres was undertaken by the Cotton, Silk and Man-Made Fibres Research Association, Shirley Institute (linen and cotton); Mr. H. M. Appleyard, Wool Industries Research Association; Dr. M. L. Ryder, Animal Breeding Research Organisation, Roslin (wool; see below, pp. 78-79); and the Royal Botanic Gardens, Kew (basketry). Mr. J. H. Thornton, Northampton School of Technology, examined the leather pieces (pp. 81-83, below), and Mr. G. W. Midgelow, Dyestuffs Division, Imperial Chemical Industries, and Professor M. C. Whiting and Mr. Takeo Sugiura of the Department of Organic Chemistry, Bristol University the dyes used on the wools (below, pp. 80-81). I am very grateful for their assistance.

LINEN

The linen textiles are all discolored, stained in varying shades of brown and tan, but it is unlikely that any of them were dyed. Tests by Mr. Midgelow on the most consistently brown of the pieces (no. 5) produced yellowish natural

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Nos. 82, 85, 88 and Ahmed Bey Kamal, *Stêles Ptolémaïques* (*Cat. général* II; *Musée des Ant. Égypt.* [Cairo, 1904]), Nos. 22018, 22088 and *passim*.

[33] Compare again the Bethshan stele referred to in n. 32, and *ANEP*², Nos. 485, and 472.

[34] Couroyer cites Contenau, *op. cit.* (above, n. 32), Nos. 128, 133, 134.

[35] Cf. Jean Vercoutter, *Les objets égyptiens et égyptisants du mobilier funéraire carthaginois* (Paris, 1945), *passim*.

coloring matter, but it was not possible to say if this had been intentionally added or not; the variations in coloring on the scraps even in this case make it probable that, as in the more patchily stained pieces, no dye had been used.

The spinning throughout is S, with the exception of two fragments (no. 28, possibly modern, no. 31, Cave II, Roman [?] date); no plied thread is used for weaving except for the wefts of the starting-borders (nos. 1, 3, 5), the warp and weft in the coarse braids (no. 54, 55), and in no. 31, but sewing threads are often Z-plied or used double. The selvedges are all simple, except for a one-cord selvedge on no. 13; all the pieces are in tabby weave, some with near even counts, some with warp preponderating. Most of the linen is of good quality; the wooly appearance of some fine pieces is due to deterioration, and under magnification the threads still have the shine of good flax.

Three pieces (nos. 1, 3, 5) have starting-borders of the simplest type, forming a firm (extended tabby) edge to the fabric (fig. A).

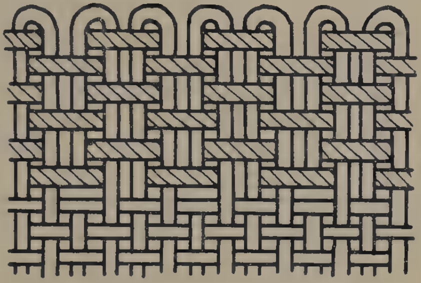

FIG. A. Starting border as on no. 1.

This type of border is the most common on prehistoric European sites; [36] it has also been found in a Roman context on a wool twill at Verulamium, third century A.D.; [37] but the only two examples previously recorded outside Europe are those from Gordion in Asia Minor, *ca.* 800 B.C.,[38] on wool and linen, and a more elaborate version from Qumrân.[39] A different type of starting-border, a narrow corded edge, is more common in the Near East.[40] Borders of either type are generally taken to indicate the use of the warp-weighted loom, on which a firm starting-edge to hold the warps evenly spaced is a necessity. Loom weights have been found at many sites in Palestine, and there is no doubt that this type of loom was widely used throughout the country; when it disappeared is uncertain, but at the period of the Samaritan refugees it was almost certainly the loom in general use. In Mishnaic times it seems that the warp-weighted loom and a two-beamed loom were in use at the same time; as in Rome, the loom with weights was probably retained for linen after it had ceased to be used for wool.[41] There are no starting-borders on either wool or linen from the Cave of Letters.

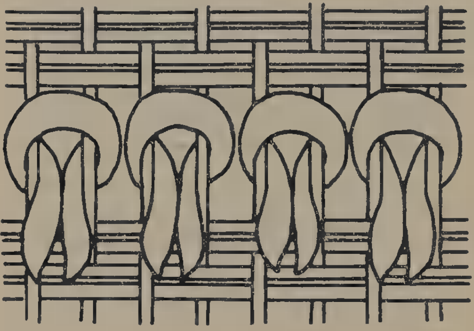

FIG. B. Ghiordes Knots in pile on no. 47.

Two groups of textiles (nos. 13, 15) have returning wefts, thrown only part of the way across the cloth in order to straighten up uneven weaving. This primitive characteristic was also found at Qumrân,[42] and on one piece at Dura.[43] It has been said that this is more likely to be necessary on a fixed two-beam loom than on a warp-weighted loom,[44] and these pieces, both probably of Roman date, may indicate that the changeover was taking place around the first and second centuries A.D., and the weavers were not yet so expert on the new loom as they had been on the old.[45]

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[36] Marta Hoffmann, *The Warp-weighted Loom*, Studia Norvegica, XIV (Oslo, 1964), pp. 151 ff.

[37] J. P. Wild, *Textile Manufacture in the Northern Roman Provinces* (Cambridge, 1970), pp. 99-100, Fig. 28.

[38] L. Bellinger, "Textiles From Gordion," *Bulletin of the Needle and Bobbin Club*, XLVI (1962), pp. 11-12.

[39] *DJD I*, no. 16.

[40] Çatal Hüyük: Harold B. Burnham, *Anatolian Studies*, XV (1965), fig. 3; Qumrân: *DJD I*, seven examples; Murabba'ât, *DJD II*, nos. 16, 79.

[41] G. M. Crowfoot in *DJD I*, pp. 22, 23.

[42] *DJD I*, p. 19.

[43] *Dura*, no. 242.

[44] H. C. Broholm and Margrethe Hald, *Costumes of the Bronze Age in Denmark* (Copenhagen, 1940), pp. 133, 134.

TUNICS

The small child's tunic (Pl. 82) has been cut out of a larger tunic or veil to which several other pieces (catalogued under no. 6) possibly belong. The cloth, with a starting-border, was of good quality linen, the thread fine but a little uneven and inclined to knot; the weave was an even tabby. The garment had been made by folding a piece on the shoulders and cutting a neck opening; the rectangle used was not long enough, or was later torn, and a narrow extra patch was added to the back. The side seams had been sewn up to the armholes; neck, armholes and back bottom edge were hemmed; the front hem was formed by part of the starting-border. If this little garment belonged to the Samaritan refugees it must have been made in the cave for a very small child.

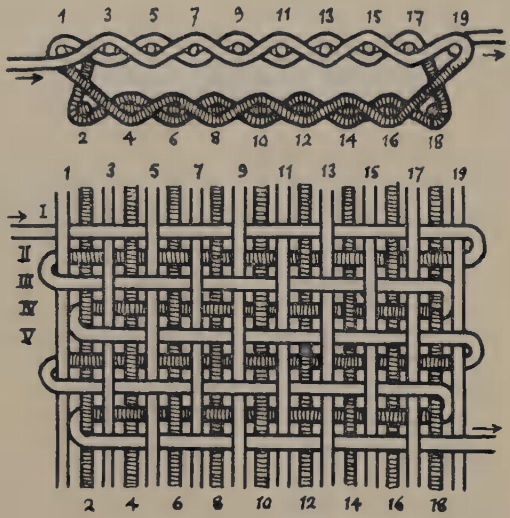

FIG. C. Tubular weave, after Braulik, *Altaegyptische Gewebe*, Figs. 59, 60.

We know that, at any rate from the last century B.C. onwards, the everyday Roman tunic was formed of two rectangular sheets, joined along the selvedges on the shoulders, leaving a hole for the neck, and generally seamed along the side (warp) edges; the other selvedges formed the bottom hem. Even the small child's shirt from the Cave of Letters was made on this pattern.[46] The one-piece tunic, common at Dura and Palmyra, is described as originating in Syria and spreading to Egypt in the middle of the third century A.D.[47]

We do not know what form the tunic had in Palestine and Syria before the Romans took the province in the last century B.C. In her study of Roman clothing Lillian M. Wilson suggests that the *tunica recta*, specially made on the warp-weighted loom for certain ceremonial uses, was in fact a straight tunic without sleeves, woven in one piece.[48] Our little tunic follows this suggested pattern; the cloth was no doubt woven on the warp-weighted loom, and the starting-border formed one hem, though because of its small size no other woven edges could be used in it; the added patch is neatly joined with a double seam, but the side seams are simply oversewn as was usual when joining selvedges. The *tunica recta* was, according to tradition, invented by Tanaquil (6th [?] century B.C.), and this simple form may have been associated with the warp-weighted loom in other areas. Perhaps too much importance should not be attached to the pattern of our tunic—it is obviously the quickest way to run up a garment for a small child—but in no. 5 the neatly oversewn selvedge seam leading down to the starting-border does suggest the side-seam and hem of a large tunic of similar design but coarser linen.

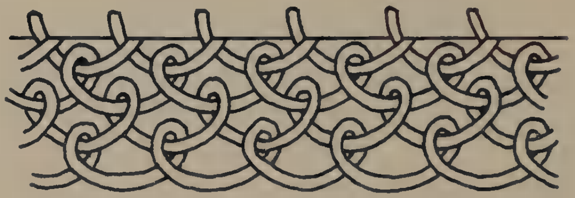

FIG. D. Looped buttonholing attached to no. 49.

Two hemmed edges, joined part of their length, and another piece of hem (no. 20), may come from the armhole of a tunic of the Roman type; another fragment with two selvedges similarly joined and then left open (no. 13), almost certainly of Roman date, could come from a neck and shoulder seam.

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[45] None of the fourteen cases of returning wefts found at Qumrân occurred in cloths where starting-cords were preserved.

[46] *JDS*, no. 65; for discussion of the pattern of the tunic, pp. 207 ff.

[47] *Dura*, p. 15; *TP I*, pp. 24 ff.

[48] Lillian M. Wilson, *The Clothing of the Ancient Romans* (Baltimore, 1938), pp. 57, 58.

FRAGMENTS WITH COLORED WOOL BANDS

As mentioned above, three of our linen pieces (nos. 2, 3, 4) have colored wool decorative bands. The finest of these, no. 2 (Pl. 83), is a woman's scarf or veil, with the remains of a fringe at one end, and above it two bands, one narrow red tabby, the other a shaded weft-faced band in fine wool tapestry; another fragment indicates three bands that may have come from the other end, or as ornament across the body of the scarf.

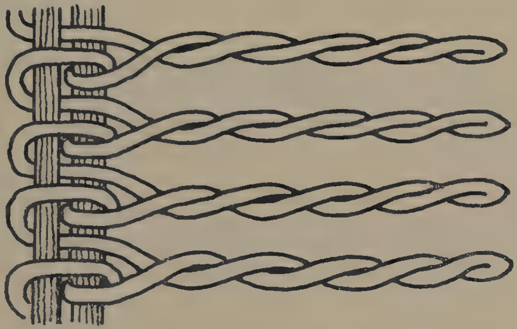

FIG. E. Loops from edge of net(?), no. 60.

This shaded band is of some interest, though the patches of color remaining are unfortunately small and faded. The wool is finer than that used in tapestry bands at Dura, though not so fine as the best at Palmyra. The shading, judging by the scraps where the color is best preserved, passed from dark blue-purple through purple to greenish-grey. Under the microscope the fibres in the dark blue-purple to purple part seem to be mingled, which at first suggested that the shading might have been produced in the laborious way described by Pfister,[49] the wool being specially spun for the band and the color shaded by the gradual addition and removal of different colored fibres; but the change between the purple and the grey is sharper, and it seems more likely that the color changed simply, though as only a few scraps of purple thread remain at the selvedge it is impossible to be certain. A larger patch of color has faded to what Mr. Midgelow describes as "navy blue, dark brown and khaki," perhaps by the deterioration of a dye common to them all; Mr. Midgelow found indigo in all three colors, and blue fibres can be seen in the "khaki" and "brown." The red dye of the narrow band was unrecognizable, though Mr. Midgelow was fairly positive that it was not madder.

No. 3 (Pl. 84) is an end from a cloth of similar weave and spinning but considerably coarser, with a starting-border and a very narrow greenish-blue band, of which the dye was identified as indigo.

No. 4 (Pl. 85a) has two pieces with selvedges joined together, one of which has sewn to it the remains of a band with traces of fine red wool on very fine linen wraps; the band goes as far as the seam and at right angles to it; there is no trace of sewing on the other piece, which is now only 19 cm. wide with a cut and hemmed edge running parallel to the selvedge seam. This may have been part of the side seam of a tunic, cut and decorated with the band to serve some other purpose.

The wool in all these bands was a true fine wool (see below, Ryder, pp. 78-79).

FRAGMENTS WITHOUT DECORATION

A number of the undecorated pieces show traces of sewing. There are hems, one from a skeleton (no. 7), two with warp ends inside (nos. 24, 28), one with a cord sewn on (no. 12, Fig. F) and one with a plaited warp-end edge (no. 13); seams of two selvedges oversewn together; flat double seams; joined hems, mentioned above, that might have come from arm-

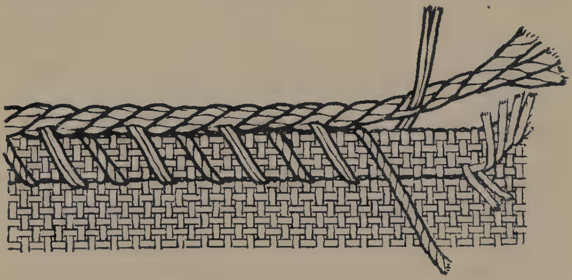

FIG. F. No. 12 with cord edge.

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[49] *TP I*, p. 36.

hole or neck openings (nos. 13, 20); a fine corner (no. 8); a piece sewn into a rolled strip for use as a belt or headband (no. 22); patches (no. 33) and other rough mends. Two sewn pieces present problems, so far unsolved; no. 11 (Pl. 87a), where a cut edge has been turned down and pleated into a bunch of folds, tacked into position, but so roughly that it seems unlikely to have come from a garment intended to last, and no. 13 (Pl. 87b), with a piece that at once suggests the added triangular corner at the side hem of late tunics;[50] however, it is hemmed along the edge that would normally be in the side seam, and apart from the question of date it seems too small and abruptly sloped for a tunic gore; it might possibly be the wing of a sleeve, but the piece it is joined to has a plaited edge and fringe, and it is unlikely that on either a hem or a sleeve edge part would have a fringe and part be left bare.

The division of the linens into groups belonging to the two occupations can only be tentative. The Cave II scraps (nos. 29-31) must be of Roman date; the pieces from Cave I grouped together under no. 13 (Pl. 87b) are extremely like no. 30 both in thread and weave, and very unlike most of the other linens, which suggests a Roman date for them also; the plaited and fringed warp-end border and self-bands appear on very similar pieces from the Cave of Letters and Murabbaʿât.[51] No. 13 is also the only linen to have anything but a simple selvedge, in this case one-cord; it probably includes fragments of several cloths with the same characteristics. The linen of these pieces is very distinctive, and it was easy to pick them out from the others, particularly when wet, when the fibre had a high shine; where stained they were very brittle and had broken along every fold line. Where not stained, the linen is apt to be greyish, agreeing well with Miss Bellinger's description of dew-retted linen as "white or silver-grey, apt to be harsh and brittle."[52] No. 12 had this same shiny appearance when wet, though it is much finer. The pieces of no. 16 are solid and uneven, and though they had not the noticeable shine they are unlikely to belong with the earlier group; from their condition they might even be modern, but they are certainly handspun and handwoven. The basket-weave sack (no. 36) is a common Roman type.[53]

The tiny fragments (no. 7) from the femur of a skeleton certainly belong to the Samaritan refugees. Owing to their position these pieces have not been stained in the same way as those from the floor of the cave, and in places they are soft, white and very silky; the warp (?) count is slightly higher than the weft (?), and a piece of hem has been sewn with Z-ply thread.

Taking this fabric as a guide, many of the pieces could come from the same period—nos. 1-4, 6-11, 18, 19, 22 and 25. In nos. 1-3, 6, 8, 10 and 25 the thread is inclined to be overspun and rather uneven, and the warp and weft counts nearly equal, while in nos. 4, 9 and 11 the warp definitely predominates and the thread is softer and more regular; no. 9 in particular has a noticeably fine even thread, and must have been a soft thin veil or scarf. All the pieces however are in the same general style as no. 7, and the variations probably simply represent different spinners and different uses for the cloth. No. 5 has the same starting-border as nos. 1 and 3. The thread here is very variable[54] and rather wooly and the weave often open, but allowing for its heavy staining and extreme deterioration it could be a coarser product of the same weavers, particularly if no. 32 is part of it.

It is impossible to assign the remainder of the pieces; they might belong with either group, and are very similar to the coarser cloths at Qumrân.

WOOL

Most of the all-woolen textiles can be recognised as coming from garments, though in some cases only tiny pieces from colored bands remain; there is however one piece of pile weave (no. 47), perhaps from a coverlet, and part of a fine tubular-woven braid (no. 48); one other fragment (no. 38) might come from a similar belt. With the exception of these last two pieces all the woolens follow familiar Roman techniques and agree with a second century A.D. dating.

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[50] R. Pfister, *Textiles de Halabiyeh* (Paris, 1951), nos. 6, 10.

[51] *JDS*, p. 255; nos. 75. 77; *DJD II*, no. 80.

[52] L. Bellinger, "Textiles From Gordion," *Bulletin of the Needle and Bobbin Club*, XLVI (1962), p. 7.

[53] *JDS*, nos. 69, 71-73.

[54] This was so marked in the scrap sent to the Shirley Institute for fibre identification that they suggested the coarse and fine yarns were combined "presumably to produce a repp effect"; in other parts both yarns are of the same thickness.

GARMENT FRAGMENTS

In his discussion of the wool from the pieces in this group (see pp. 78-79) Dr. Ryder compares the samples to those from parchment from the Dead Sea Scrolls and wool from the Cave of Letters; in all, the generalised medium type of fleece predominates, with a very few true fine specimens.

Two pieces, nos. 37 and 42, show colored weft-faced bands, probably the customary *clavi* of the Roman tunic; in the case of no. 37 the main weave is also weft predominating; in no. 42 the wefts are paired throughout (extended tabby).[55] No. 43 is a yellow tabby weave with no bands preserved; there is a tiny scrap of tabby weave also on the edge of the purple band no. 39; all the other small fragments are weft-faced, some being from bands and some from main weaves. Selvedges are only present on three pieces, nos. 37, 42 and 43, all three-cord selvedges of the type most common in the Cave of Letters,[56] that of no. 43 having a reinforcing thread; [57] no. 37 also has a closing border of corded warp ends.[58]

The spinning throughout is S, except for the paired Z-spun wefts of no. 42. The quality of the fabrics, as far as can be judged from counts and photographs, is very similar to that of pieces from the Cave of Letters. It is impossible from the scraps that remain to determine the pattern of these woolen tunics but it is most probable they were made from two tunic sheets.

The small amount of colored material available for analysis made identification of dyes very difficult (see reports by Mr. G. W. Midgelow and Professor M. C. Whiting and Mr. T. Sugiura, pp. 80-81 below). Madder was found in no. 38 (tubular band?); indigo with a trace of madder in the blue band of no. 42; and the red dye discussed in both reports (pp. 80-81 below) from the band of no. 37 was also present combined with indigo for the purple fragments nos. 39 and 40. It was not possible to recognise the coloring matter of nos. 43 and 48, but their yellowness, and that of nos. 42 and 46, is so noticeable that it is probable they were dyed, and not only stained by contact with the cave floor.

FRAGMENT WITH PILE

The fragment with pile (no. 47; Pl. 89a) has single Z-ply warps and paired S wefts; the pile (Fig. B) of single rows of Ghiordes knots is similar to one from Dura.[59] The soft loose weave of this piece suggests something like a bed-cover. Mrs. G. M. Crowfoot has noted bedouin weaves with a similar pile,[60] but Dr. Ryder considers that the true fine wool of no. 47 is more likely to be ancient than modern. It could belong with the Roman-period textiles.

TUBULAR BRAID

By good fortune one weft thread still completes the circle and holds a piece of this braid together (no. 48, Pl. 89b); without this it would have been assumed to be part of a very fine weft-faced band. As it is, clearly the coarse threads are the weft and the very fine close threads the warp, forming a tubular braid in warp-face tabby plain weave, 3.5 cm. in diameter. The thread in both systems is S, Z-plied, the wool coming from a true fine fleece (see below, p. 79). The outer surface of the braid is felted, probably deliberately; inside the threads can clearly be seen and counted.

Braulik's diagram (Fig. C) of a tubular-woven braid in the Graf collection at Vienna shows the arrangement of warp and weft in a weave of this kind,[61] which can be woven on the simplest type of loom or frame—in the bedouin double girth weave the girth is hollow where there is no exchange of threads from front to back for pattern.[61a] The Graf braid is linen, tabby weave; a woolen tubular braid from Palmyra, only 8 mm. across, is in 2 x 1 twill, and Pfister considered this tiny tube to be one of the narrow belts, tied in front, that appear on the funerary sculptures.[62] St. Jerome describes a tubular sash "woven in the round" which priests used for a girdle,[63] and it seems certain that our braid is part of a belt.

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[55] Cf. *Dura,* no. 204.

[56] *JDS,* Table 13.

[57] Cf. *JDS,* p. 200; *DJD II,* nos. 31-35; *Dura,* nos. 69, 130.

[58] Cf. *JDS,* Table 14; *TP I,* L. 12; *Dura,* no. 39; *DJD II,* Nos. 36-38.

[59] *Dura,* no. 224.

[60] G. M. Crowfoot. "The Tent Beautiful," *PEQ,* p. 36.

[61] August Braulik, *Altägyptische Gewebe* (Stuttgart, 1900), pp. 27, 28, figs. 59, 60. Braulik describes the braid as "more than 2000 years old."

[61a] G. M. Crowfoot, "The Sudanese Camel Girth in double weave," *Sudan Notes and Records,* XXXII, Pt. 1, 1951, p. 71 ff.

The fragment no. 38, a red stripe with remains of undyed wool at each side, is, in wool type, spinning, and general appearance similar to no. 48, and is similarly felted on one side; it almost certainly comes from another belt, in this case with colored threads set up in the warp so that the belt was striped lengthwise. These belts may be of the Roman period, but in view of the late Egyptian example of the weave it is possible that they belong to the earlier occupation of the cave.

TENT FABRICS AND BRAIDS

There are a number of scraps of tent fabric, but unlike that from Murabbaʿât and most of the Dura pieces, which were goat hair,[64] they are all of camel hair (see Dr. Ryder's report, p. 79). Nos. 51-53 probably all come from the same tent. Mr. G. Lankester Harding writes: "It is very necessary to have a strong and rather fine material towards the middle to resist the thrust of the tent poles," which perhaps accounts for the variation in texture and weight of different pieces. Even the piece with a wool warp and camelhair weft may have formed another section of the same tent; one tent at Dura combined wool, linen, goathair and wild cotton.[65]

One of the coarse braids, no. 54, is attached to the camel hair and wool fabric (Pl. 90 right), and no doubt all of them served some purpose in strengthening and joining the pieces of the tent. The buttonholing work, no. 49 (Fig. D), is similar to a piece found at Murabbaʿât,[66] where, as it was not attached to any other fabric, a possible connection with a tent was not suggested. It seems to be in the nature of a strengthening or repair rather than a decoration.

It is difficult to suggest a date for these pieces. Of the two scraps of linen caught in the buttonholing the finer could come from either group, the coarser only from the Roman textiles, and it seems probable that it is with this period that the tent belongs.

CONCLUSIONS

The textiles of the Roman period need no further comment, but those that belong to the earlier refugees raise some interesting points. Among the comparative material, the finer scroll wrappers from Qumrân[67] are perhaps nearest in style and quality to the linen of our better pieces, though ours have slightly higher counts and softer textures. We have nothing, however, so fine as the finest linens at Palmyra.[68] Since the old warp-weighted loom was probably used for our pieces and was still employed at Qumrân for the older wrappers, changeover to the new loom may have been responsible for the greater control which produced the superior fabrics.

The mass of white linen is in striking contrast to the colored woollens of the later deposits of the Roman period. The small number of decorated pieces includes one that must have been very attractive, the scarf with a shaded band, no. 2. It is tempting to suggest that if this did indeed belong to one of the Samaritan refugees the type of decoration may be due to the Persian origin of the Samaritan ruling class, and this simple shaded band may indicate a taste that was to flower into the elaborate decoration of Pfister's "Iranian costume" of the third century A.D.[68a]

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[63] Jerome, *Epistulae* 64.12 (ed. J. P. Migne, *Patrologia, Series Latina*, XXII, 614). I am indebted to Dr. J. P. Wild for this information.

[64] *DJD II*, no. 69; *Dura*, nos. 267-286.

[65] *Dura*, no. 262.

[62] *TP III*, p. 24, no. L. 118, Pl. Xa.

[66] *DJD II*, no. 146.

[67] *DJD I*, nos. 1, 19, etc.

[68] *TP I*, pp. 15 ff.

[68a] *TP II*, pp. 25-33.

CATALOGUE OF TEXTILES

LINEN

(The spinning direction of the yarn is indicated by the central stroke of the letters S [left-spun] and Z [right-spun].)

TUNIC

1.			Cave I.3	Pl. 82; Fig. A
WARP	S	(20)	linen, undyed	ca. 25 cm.
WEFT	S	(19)	linen, undyed	ca. 31 cm.
			tabby; no selvedge; starting border, extended tabby	

Parts of small child's tunic made from good quality scarf or veil; spinning in both systems fine but uneven, inclined to knot; weaving good. Front, now torn in two pieces, originally all one piece folded on the shoulders, continuing to 5.5 cm. of back hem, where another strip is neatly added with a double-hemmed seam; neck ca. 18 cm. wide, cut and hemmed with fine Z-ply thread; one armhole preserved, similarly hemmed, 9 cm. deep from shoulder fold; side seam below the armhole was single oversewn seam; back of the neck missing. The front hem is part of a simple starting-border of 6 Z-ply wefts through the warp lops (Fig. A); the back lower edge has a simple hem. The added piece at the back is cut the other way of the weave, with ca. 6 cm. of the starting-border sewn into the side seam.

SCARF WITH SHADED BAND

2.			Cave I. 2, 3	Pl. 83
WARP	S	(16)	linen, undyed	ca. 17.5 cm; 11.0, 8.5, 6.5
WEFT	S	(15-16)	linen, undyed	ca. 16.0 cm; 11.0, 7.5, 6.5
"	S	(72)	wool, grey-green, purple, blue	
"	S	(7 on 2 mm.)	wool, red	
			tabby; simple selvedge tabby bands; fringe at end	

Fragments from a fine scarf, spinning rather uneven in both systems. The largest piece has a fringe, some ends 4 cm. long, but too tangled to see if they were twisted. 1.2 cm. above the fringe, a tabby band of 7 throws red wool, 2 mm. wide; 4 mm. plain linen, then a shaded wool weft-faced band 1.05 cm. wide, of which only patches remain. To one end the band is greenish below (4 mm.), purple (4 mm.), dark blue (2.5 mm.); there are grey-green and purple only left in the next patch; further along a scrap of purplish-blue at the top of the band, at the selvedge. Another tiny fragment (above in photograph) shows two different stripes from the other end or across the body of the scarf; after 4.5 cm. plain linen, bare warps from similar narrow red stripe with a few traces of red wool, 2.5 mm. plain linen, 1.1 cm. bare warps with one thread of purple; after another 1.2 cm. linen the piece is torn, but one scrap of deep blue wool caught at the edge indicates that the tear came at the start of another band. Some other plain linen pieces probably belong. *Ryder*: true fine wool.

FRAGMENTS WITH COLORED WOOL BANDS

3.			Cave I. 3, 8	Pl. 84
WARP	S	(13-14, selvedge 16)	linen, undyed	ca. 16.0, 19.5, 11.0, 1.3
WEFT	S	(11-13)	linen, undyed	ca. 18.0, 32.0, 10.0, 5.5
"	S	(10 on 2.5 mm.)	wool, blue-green (indigo)	
			tabby; simple selvedge; extended tabby starting-border; narrow tabby band	

Pieces from a cloth, three adjoining; spinning and weaving both uneven; starting-border of 6 Z-ply wefts in tabby through the warp loops as in no. 1., tied in a knot at the corner (Pl. 84b) where it meets the selvedge. 2.5 cm. below the border is a narrow blue-green wool band, 2.5 mm. wide. Some other fragments probably belong. *Ryder*: true fine wool.

4.	Cave I. 3	Pl. 85a
WARP S (r. 19, 1.16)	linen, undyed	ca. 32. cm., 7.5
WEFT S (r. 12, 1.13)	linen, undyed	ca. 35.0 cm., 11.5
WARP S (ca. 26) band	linen, undyed	
WEFT S (ca. 60) “	wool, red	
	tabby; simple selvedge; extend tabby band over paired and some single warps, sewn on	

Two pieces sewn together, soft rather wooly surface, warp finer and more regular than weft. The piece on the right, 19.5 cm. wide, has selvedge down one side, and 9 cm. of the opposite edge roughly rolled and oversewn with Z-ply thread; the selvedge is oversewn to the selvedge of the left-hand piece, which measures roughly 11.5 x 6 cm. On the left piece, finishing at selvedge seam, are scraps of a fine band, sewn to the linen with Z-ply thread, which must have been at least 3 cm. wide, red wool on linen warps considerably finer than those of the weave it is sewn to. Another fragment has more of the same red band, ca. 7 mm. x 2.5 cm. There is some staining from the red on this piece, and also faintly on the hemmed edge of the right-hand piece, which perhaps lay across the band. Another fragment probably belongs. *Ryder*: true fine wool.

FRAGMENTS WITHOUT DECORATION

All tabby; linen, undyed

5.	Cave I. 3	Pl. 86
WARP S (r. 14, 1.19-14)	simple selvedge; extended	ca. 16.0 cm., 30.0, 12.0
WEFT S (r. 9, 1.10)	tabby starting border	ca. 20.5 cm., 15.0, 11.0

Two pieces joined together that may be part of the same fabric. The remains are in tiny fragments, identifiable by the spinning, very irregular, warp often coarser and softer spun than weft; the whole is darkly stained. Part of one piece has 20 cm. of starting-border similar to those on nos. 1 and 3, but with 8 Z-ply threads through the warp loops, and ca. 13 cm. of selvedge, though the corner where they met is missing. Another piece has 5 cm. of the starting-border, torn in one place and cobbled together with Z-ply thread; 6.5 cm. from the tear is a selvedge, oversewn neatly with double S thread to a similar selvedge on the left-hand piece (Pl. 86b). The two pieces with lengths of starting-border seem to join but this is not likely, as the cloth would then only measure ca. 31 cm. from selvedge to selvedge. Another piece from the selvedge seam has part of a wide double-hemmed seam running across it. Many unmeasured scraps may belong. See also below, no. 32.

6.	Cave I. 2, 3	
WARP S (19-23)		ca. 29.5 cm., 17.0, 15.0
WEFT S (17-19)		ca. 10.0 cm., 11.0, 28.0
	simple selvedge	

Pieces which probably come from the same veil or tunic from which the child's tunic, no. 1, was cut; fine simple selvedge the whole length of the largest piece, with scraps of sewing thread hanging from it, showing it was probably seamed to another piece. Other smaller fragments may belong.

7.	Cave I. 4-5 round left femur	
WARP(?) S (14-15)		ca. 7.0 cm., 10.0, 4.0, .8
WEFT(?) S (13)		ca. 1.0 cm., 2.2, 5.0, 4.5

Four pieces and some tiny scraps. The flax fibre was better preserved than other samples, beautifully white and silky where safe to clean. One piece from a hem, sewn with Z-ply thread.

8. Cave I. 8 Pl. 85b
WARP S (34-24) ca. 3.4 cm., 1.7
WEFT S (18-20) ca. 3.0 cm., 5.0
simple selvedge

Corner from a very fine cloth; thread fine, overspun, especially in the warp. One side edge has selvedge (15 warps on 2.5 mm.) turned inside the corner hem; another scrap of selvedge is oversewn to this, but there is not enough to show why. Some very fine open scraps probably belong.

9. Cave I. 3
WARP(?) S (24-30) ca. 26.0 cm., 16.0
WEFT(?) S (17-21) ca. 37.0 cm., 7.5
no selvedge preserved

Four fragments (three join together and are measured as one piece) and some scraps of fine very soft linen, the thread beautifully regular but with a few snarls; loose weave, easily pulled so that count varies. When found and cleaned these pieces were pleated into tight folds which at first were thought to be deliberate, but on the second piece the creasing was irregular, and it is most likely the tight folds were due to its extreme softness.

10. Cave I. 3, 8
WARP S (14-18, selvedge 25) ca. 25.0 cm., 19.5, 5.0, 9.0
WEFT S (14-20) ca. 30.0 cm., 15.0, 7.5, 12.0
simple selvedge

Fine linen with fine regular selvedge on three pieces; spinning fine but irregular; the unevenness of the count may be largely due to deterioration. One piece has been tied at the corner. Many small scraps. Could possibly belong with no. 6.

11. Cave I. 2 Pl. 87a
WARP(?) S (24) ca. 11.0 cm., 11.5
WEFT(?) S (10-11) ca. 17.0 cm., 11.0
no selvedge preserved

Two pieces, soft wooly appearance, spinning very regular in warps. The top edge has been turned over on both pieces, and on the larger it is still partly tacked in a bunch of pleats with a Z-ply thread; this pleating probably continued on both pieces. Four other fragments without sewing probably belong. No. 11 might possibly belong with no. 4.

12. Cave I. 2 Fig. F
WARP(?) S (17-19) no selvedge; ca. 1.8 cm., 2.0
WEFT(?) S (16-18) cord sewn to hem ca. 7.0 cm., 10.2

Two fragments of similar weave, close and regular, thread shiny. One piece (Fig. F) comes from a border; the edge of the cloth has been cut and turned over and oversewn with a Z-ply thread, and then an S cord of three Z 3-ply linen threads has been sewn to its edge with a double S thread. Another two scraps, adjoining each other, come from a seam, double hemmed with fine Z-ply thread.

13. Cave I. 2, 3, 8 Pl. 87b
WARP S (11-15) ca. 17.0 cm., 5.0 12.0, 24.0, 26.0
WEFT S (8-13) ca. 12.0 cm., 13.0, 7.0, 8.5, 16.0
one-cord selvedge; plaited
warp edge with fringe;
returning wefts

Under this number about 40 pieces and many tiny scraps have been catalogued together; the fabric was very brittle, and the number is largely due to the way it has broken wherever folded; all alike in thread, shiny, uneven, inclined to knots and lumps; weaving uneven with some paired warps and a number of wefts returning internally to even up the weave. Pieces illustrated show triangular corner, cut, turned under and hemmed on two sides, on the third sewn with a broad double-hemmed seam to a fragment of coarse one-cord (8 warps) selvedge; this piece with selvedge ends in a warped-end plait and fringe of which only a few threads are left; ca. 13 cm. above plait is a self-band of at least 7 threads thrown together. Other pieces have further bits of the plaited edge and the self-band; one has a tear roughly tacked together with double S thread. Pieces not photographed include a long strip with similar one-cord selvedge and traces of sewing thread, obviously part of the same seam as that joining the corner piece; a fragment with two edges of one-cord selvedge, turned over and hemmed, joined for 1 cm. and then open, perhaps part of a neck opening; a strip 14 cm. long of a cut edge, rolled and oversewn; two pieces with one-cord selvedge of 5 warps, turned over and hemmed, one of which has four returning wefts close together to straighten the weaving; and the largest fragment, two layers tacked together roughly with double S thread.

14. Cave I.2

WARP S (14, selvedge 20) ca. 12.5 cm.
WEFT S (11) ca. 16.0 cm.

simple selvedge

Close, wooly, spinning uneven; strip 20 cm. long hanging from one corner, tied in a loose knot.

15. Cave I. 2, 3

WARP S (13-17) ca. 35.0 cm., 10.0, 14.0, 14.5, 17.0
WEFT S (10-12) ca.11.0 cm., 22.0, 14.0, 15.0, 12.0

simple selvedge; returning wefts

Eight main pieces, a number of scraps; weave fairly solid, spinning even, but some paired warps and returning wefts on several pieces to even the weave. One piece of a double-hemmed seam; another with two selvedges oversewn together with Z-ply thread.

16. Cave I.3

WARP S (12-20) ca. 20.5 cm., 14.0, 9.0, 10.0
WEFT S (10-12) ca. 56.0 cm., 24.0, 30.0, 32.0

simple selvedge

Four pieces, the largest three fragments sewn together, a long strip joined to another made of two bits joined along selvedges; very rough sewing. Another has very rough hem. Very solid, spinning and weaving uneven.

17. Cave I. 8

WARP S (14-18) ca. 8.0 cm., 17.5
WEFT S (10-11) ca. 9.5 cm., 10.5

simple selvedge

Corner pieces from cloth, adjoining, wooly surface, warp regular, selvedge firm (16 warps per 5 mm.); selvedge turned over, hemmed Z-ply thread; top edge cut, turned over roughly, oversewn. Other fragments may belong with no. 14.

18. Cave I. 8

WARP S (20-24) ca. 15.0 cm., 7.5
WEFT S (15) ca. 5.0 cm., 2.5

simple selvedge

Two fragments with selvedge turned over and sewn down, some thread adhering; except where pulled spinning and weaving both regular. 6 cm. length rolled edge neatly oversewn with fine Z-ply thread and some other scraps probably belong.

19. Cave I. 3

WARP(?)	S	(16-19)	ca. 21.0 cm., 6.5
WEFT(?)	S	(15)	ca. 9.5 cm., 2.0

Two pieces, rolled edges very carelessly hemmed Z-ply thread; scraps may be part of no. 4.

20. Cave I. 8

WARP	S	(14-16)	ca. 9.0 cm., 16.0, 7.5, 5.0
WEFT	S	(12-13)	ca. 3.0 cm., 3.0, 2.5, 4.0

simple selvedge

Fragments, fairly regular spinning and weaving; one piece has two edges turned over, one with warp ends inside, hemmed Z-ply thread, free 4 cm., oversewn together 5 cm., armhole (?); piece of hem may join on; part of selvedge oversewn to cut edge of another piece; two other pieces tacked together with coarse Z-ply thread.

21. Cave I. 3

WARP	S	(14)	ca. 13.0 cm.
WEFT	S	(15)	ca. 10.0 cm.

simple selvedge

From edge of cloth, close and wooly; some other scraps.

22. Cave I. 2

WARP(?)	S	(16)	ca. 4.5 cm.
WEFT(?)	S	(11)	ca. 21.5 cm.

Good regular spinning; piece with rough edges, sewn neatly into a tight roll with Z-ply thread; part of belt or headband ?

23. Cave I.3

WARP(?)	S	(15)	ca. 9.0 cm.
WEFT(?)	S	(9)	ca. 11.0 cm.

Fragment well preserved, spinning and weaving regular; one corner rolled and oversewn, double S thread, probably a mend as the seam runs into the piece, not along the edge.

24. Cave I. 2

WARP	S	(13-19)	ca. 6.5 cm.
WEFT	S	(12)	ca. 14.5 cm.

warp end fringe

Fragment, spinning and weaving variable, especially warp thread; rough hem sewn with Z-ply thread, inside it cut warp ends ca. 1.5 cm. long, originally a fringe, Z-twisted in bunches varying from 4 to 8 warp ends.

25. Cave I.8

WARP	S	(14-16	ca. 5.5 cm., 8.0
WEFT	S	(13-14)	ca. 2.0 cm., 6.0

simple selvedge

Five fragments and some little scraps, wrapped together, probably belonging. Spinning and weaving good but irregular. Very regular selvedge (20 warps on 5 mm.) with scrap from another sewn to it; other pieces plain.

26. Cave I. 3, 8

WARP(?)	S	(12)	ca. 9.0 cm., 12.0, 12.5
WEFT(?)	S	(11)	ca. 13.0 cm., 8.0, 8.0

Three pieces; rather open weave, spinning fair.

27.
Cave I. 8
WARP S (12-14) ca. 1.0 cm., 10.0, 2.5
WEFT S (12-14) ca. 7.0 cm., 6.3, 11.0
warp ends

Piece with hem sewn Z-ply thread, inside cut warp ends c. 1.2-1.5 cm. long. Other scraps with hem; rather wooly.

28.
Cave I. 3
WARP S (16) ca. 7.0 cm.
WEFT S (10) ca. 4.5 cm.
simple selvedge

One fragment, spinning very irregular; very well preserved. Modern (?).

29.
Cave II
WARP S (16) ca. 25.0 cm.
WEFT S (11) ca. 3.8 cm.
simple selvedge with self-stripe

Strip from selvedge, solid, fairly regular spinning and weaving; simple selvedge for 5 warps, then self-stripe of 3 warps together.

30.
Cave II
WARP(?) S (11) ca. 5.0 cm., 1.3
WEFT(?) S (8-10) ca. 12.5 cm., 15.0

Two strips and a scrap, very irregular spinning and weaving, thread full of knots; very similar to no. 13 but more irregular.

31.
Cave II
WARP(?) Z, S-ply (11) ca. 5.0 cm.
WEFT(?) Z, S-ply (13) ca. 2.0 cm.

One scrap, regular rather open weave.

32.
Cave I.3
WARP S (8-10) ca. 30.0 cm., 50.0, 34.0
WEFT S (9-12) ca. 28.0 cm., 25.0, 18.0
simple selvedge

A number of pieces from a coarse sheet or garment, only the three largest measured; the weave is rather open and has pulled badly; the original count was probably ca. 10 x 10. It is possible that these pieces belong with no. 5; they have the same very variable spinning with a number of soft coarse threads in the warp, and some parts show the same dark staining.

33.
Cave I. 3, 8
WARP(?) S (9) ca. 10.0 cm., 8.0
WEFT(?) S (10) ca. 7.0 cm., 7.0
Patches:
WARP S (a. 24, b. 13, c. 24)
WEFT S (a. 12, b. 12, c. 16)
simple selvedge on patch

Two pieces from coarse material similar to no. 32, patched. One has two patches on top of each other; the top one (a) is fine linen with 6 cm. of regular selvedge, traces of fine Z-ply sewing threads; beneath this is remains of coarser patch (b) sewn with coarse Z-ply thread; the sewing from the second edge of the patch is there, though part of the patch is gone. On the other piece, part of a fine linen patch (c), perhaps another part of (a); a piece of the coarse weave is sewn into a bunch.

34.			Cave I. 3	
WARP(?)	S	(11-12)		ca. 8.0 cm., 11.0
WEFT(?)	S	(9-11)		ca. 13.0 cm., 6.5

Four fragments from open weave, sheet or sack, no selvedge; one corner bunched into a knot and sewn round with Z-ply thread.

35.			Cave I. 8	
WARP(?)	S	(12)		ca. 5.0 cm.
WEFT(?)	S	(8)		ca. 11.5 cm.

A fragment and some scraps coarse close-woven cloth; spinning regular, weft (?) overtwisted; one example of paired warps (?).

BASKET WEAVE

36.			Cave I. 2, 3	Pl. 88a
WARP	S, S	(24)	linen, undyed	ca. 30.0 cm., 8.0, 10.0, 10.0
WEFT	S, S	(16)	linen, undyed	ca. 16.0 cm., 9.0, 11.0, 10.0
			basket weave; selvedge one cord; self-band	

Fragments from a solid sack, spinning and weaving regular. Part of two selvedges with one cord of 6 warps oversewn together with Z-ply thread, probably side seam of sack; one self-band of 8 threads thrown together. Another piece has one throw of 3 threads instead of 2, and two faults where the weft is caught back in a loop for a few warps.

WOOL

FRAGMENTS WITH COLORED BANDS

37.			Cave I.3	
WARP	S	(9-11)	wool, undyed	ca. 10.0 cm., 5.0, 7.0, 6.0
WEFT	S	(13-18)	wool, undyed	ca. 15.0 cm., 2.5, 4.0, 10.0
"	S	(20)	wool, red (dye, see pp. 80-81 below)	
			tabby; three cord selvedge; end border of corded warp ends	

Very fragmentary, but some pieces connect; warp finer and harder spun than weft, weaving firm but irregular. Remains of red band, 1.1 cm. wide, on three pieces; scrap of selvedge, including band, three cords of 4 warps each, no reinforcement; on one piece, cord of warp ends for 2.5 cm., the warps entering the cord in groups of about 6. *Ryder*: warp, true fine wool, weft generalised medium.

38.			Cave I. 8	
WARP(?)	S, Z-ply	(60)	wool, red (madder)	ca. 5.0 cm.
" (?)	S, Z-ply	(ca. 60)	wool, undyed	
WEFT(?)	S, Z-ply	(11)	wool, undyed	ca. 1.6 cm.
			tubular braid, warp-faced, or fine band	

One fragment; 8 warps (?) undyed, 1.5 cm. fine red, 3 undyed. One surface felted. This piece could be a fine weft-faced band, but is so similar in every way to no. 48 that it almost certainly comes from a similar tubular braid in a solid warp-face weave. *Ryder*: true fine wool.

39.	Cave I. 8	
WARP S (12)	wool, undyed	ca. 3. 1cm.
WEFT S (18?)	wool, undyed	
" S (37)	wool, purple (see p. 80 below)	ca. 8.0 cm.
	plain cloth,with tapestry band over 2 and occasionally 1 warp.	

Part of purple band on tabby weave, of which only 5 throws remain; 8 undyed wefts at one edge of band. Warp thread very fine and even, undyed weft coarser than purple weft. The day has separated and faded into pink and blue in patches. *Ryder*: warp, true fine, weft, generalised medium wool.

40.	Cave I. 8	
WARP S (12)	wool, undyed	ca. 2.5 cm.
WEFT S (33)	wool, purple (as in 39)	ca. 3.2 cm.
" S (ca. 16)	wool, undyed	
	extended tabby band over 2 and occasionally 1 warp	

Another fragment that might come from a less stained part of no. 39; only 7 wefts undyed left at one edge, no main weave present. *Ryder*: weft, generalised medium wool.

41.	Cave I. 8	
WARP S (8)	wool, brown	ca. 6.0 cm.
WEFT S (24-26)	wool, brown	ca. 4.0 cm.
" S (24-26)	wool, dark brown, green	
" S (10 on 2.5 mm.)	wool, red	
	extended tabby over 1 and sometimes 2 warps	

Fragment with narrow coloured bands; warp well twisted, wefts very soft, weaving loose. Brown (unpigmented, may have been originally white) 1.7 cm., dark brown (naturally pigmented) 4 throws, brown 14, red 10, green 8, red 8, mixed browns to end of scrap. Red thread finer than other weft threads. *Ryder*: warp wool, fine and medium fibres, weft mostly fine, some medium (identification by letter from Dr. Ryder.)

FRAGMENT WITH PAIRED WEFTS AND COLORED BAND

42.	Cave II	Pl. 88b
WARP S (11-12)	wool, yellow	
WEFT Z, Z (34)	wool, yellow	
" Z, Z (50)	wool, blue (indigo, trace madder)	
	extended tabby (paired wefts); weft-faced band with paired wefts over 2 and occasionally 1 warp; three-cord selvedge	

Adjoining fragments probably from a tunic-sheet, yellow with blue band at least 2 cm. wide (lower threads missing on one section, upper on the other); 8 throws yellow on either side of band; selvedge three-cord of 4 warps each. *Ryder*: generalised medium wool.

FRAGMENTS FROM GARMENTS

43.			Cave I. 2	
WARP	S	(10-11)	wool, yellow	ca. 21.5 cm., 12.5
WEFT	S	(9-10)	wool, yellow	ca. 7.5 cm., 6.0
			tabby; three-cord selvedge, reinforced	

Two pieces, one with selvedge, and some small scraps, probably from a tunic; warp fine, tightly spun, weft loose, weaving uneven. Selvedge has 3 cords of 4 warps each, reinforced with a triple thread of similar wool. *Ryder*: Generalised medium wool.

44.			Cave I. 8	
WARP	S	(7)	wool, undyed	ca. 1.9 cm.
WEFT	S	(40)	wool, undyed	ca. 3.5 cm.
			weft-faced tabby	

One fragment and a tiny scrap, perhaps from a band; warp regular tightly spun, weft soft.

45.			Cave I. 8	
WARP	S	(8-9)	wool, undyed (?)	ca. 8.0 cm.
WEFT	S	(40-44)	wool, undyed (?)	ca. 4.2 cm.
			weft-faced tabby	

Fragment yellowish-brown, probably undyed; warps coarse, well-twisted, weft fine, weaving rather loose; on long edge hem, sewn with Z-ply linen thread. *Ryder*: fine wool (identification by letter from Dr. Ryder).

46.			Cave II	
WARP(?)	S	(10-11)	wool, yellow	ca. 1.7 cm., 1.1, 1.0, 1.3, 1.5
WEFT(?)	S	(21)	wool, yellow	ca. 18.0 cm., 16.0, 10.0, 8.5, 12.0
			tabby occasional paired wefts	

Five strips torn from same cloth, one tied in knot; three of the pieces each have one paired weft. *Ryder*: warp, generalised medium wool, weft, hairy medium.

FRAGMENT WITH PAIRED WEFTS AND PILE

47.			Cave I. 2	Pl. 89a, Fig. B.
WARP	S, Z-ply	(4-5)	wool, brownish	ca. 7.5 cm.
WEFT	S, S	(16)	wool, brownish	ca. 5.5 cm.
"	S, Z-ply	(pile)	wool, brownish	
			exended tabby with paired wefts, occasional three, weft pile Ghiordes knots	

One fragment, loosely woven, weft soft, warp well-twisted; at intervals of 10-12 throws of weft, single rows of Ghiordes knots, passing round 2 warps (Fig. B); the pile weft is made up of 4 threads similar to the warps used as one thread. *Ryder*: true fine wool (identification by letter from Dr. Ryder).

TUBULAR BRAID

48.			Cave I. 3	Pl. 89b
WARP	S, Z-ply	(90)	wool, yellow (see pp. 80-81 below)	ca. 8.0 cm., 3.5, 3.0
WEFT	S, Z-ply	(10)	wool, yellow	ca. 3.0 cm., 3.5, 2.5
			tubular braid in warp-faced tabby	

Three fragments from the braid, the two larger folded double, the third a single fragment; total width of complete braid 3.5 cm.; the largest piece has one edge missing, but the second piece has one weft holding the tube together. Weft well corded, warp very fine, lightly plyed; the outside surface is felted. For arrangement of the tubular weave see Fig. C. *Ryder*: true fine wool.

TENT FABRICS

49.			Cave I. 3, 8	Pl. 90 center, Fig. D
WARP	Z, S-ply	(4)	camel, dark brown	ca. 6.0 cm., 12.0, 7.0
WEFT	Z, Z	(8-10)	camel, dark brown	ca. 9.0 cm., 6.0, 8.0
			extended tabby with paired wefts; attached to it, looped buttonholing, two fragments linen	
LOOPING THREAD	Z, S-ply		flax	
WARP	S	(17)	linen, undyed	
WEFT	S	(11)	linen, undyed	
			tabby; simple selvedge	
WARP	S	(11)	linen undyed	
WEFT	S	(10)	linen undyed	
			tabby; no selvedge	

A number of small fragments of the dark brown tent-cloth; some have coarse looped buttonholing, interlaced, attached; it is possible that the detached pieces of this netting (Fig. D) were originally not a fabric on their own but, as in some scraps still, rows of interlacing buttonholing sewn through the haircloth from which the hairs have fallen out. In one piece the thread pierces the thread of the preceding loop, i.e. the work was sewn with a sharp needle. Two pieces of buttonholing have scraps of two different linen cloths caught in by the thread.

50.			Cave I. 2, 3	Pl. 90 right
WARP	Z, S-ply	(3)	wool, light brown	ca. 20.0 cm., 8.5, 3.5
WEFT	Z, S-ply	(12)	camel, dark brown	ca. 19.0 cm., 12.0, 11.0
			coarse tabby, weft-faced; two-cord selvedge	

Fragments, only the three best measured; the piece shown on Pl. 90 is attached to braid no. 54. One fragment has a scrap of two-cord selvedge, the edge cord of 3 warps, the second of 2. Warp and weft regular, warp corded and solid, mixed light and dark hairs, warp nearly black, brittle. *Ryder*: warp, hairy sheep.

51.			Cave I. 2, 3, 8	Pl. 90 left
WARP	Z, S-ply	(4)	camel, dark brown	ca. 38.0 cm., 12.0, 7.0
WEFT	Z	(10-12)	camel, dark brown	ca. 38.0 cm., 20.0, 52.0
			coarse tabby, weft-faced; one-cord selvedge	

Many scraps tent fabric, warp corded, weft very brittle, breaking into short hairs; all the thread has a proportion of light hairs. Two pieces have coarse Z-twisted threads sewn through the fabric in pairs to make a nearly continuous line, to strengthen against the pull of the tent rope, four radiating lines on one piece (Pl. 90 left), three on another ending in knot of thick rope of same fibre as weave. One scrap with two fragments of selvedge sewn together, one cord of 4 warps.

52.			Cave I. 3	
WARP	Z, S-ply	(3)	camel, dark brown	ca. 8.0 cm.
WEFT	Z	(8)	camel, dark brown	ca. 3.5 cm.
			coarse tabby	

Noticeably coarser than no. 51, but may belong.

53.			Cave I. 3	
WARP	Z, S-ply	(5)	camel, dark brown	ca. 4.0 cm.
WEFT	Z	(10)	camel, dark brown	ca. 2.0 cm.
			tabby, weft-faced	

One fragment, warps very noticeably finer than in nos. 51 and 52, but may belong.

BRAIDS

54.			Cave I.2, 3	Pl. 90 right
WARP	S, Z-ply	(8)	bast, probably flax	15.5 cm., 6.0
WEFT	S, Z-ply	(2-2.5)	bast, probably flax	6.5 cm., 6.5
			coarse tabby, weft-faced	

Two fragments, full width present, one sewn to tent fabric no. 50, coarse S-ply threads tied in long half-bow; smaller detached fragment has sewn threads hanging from it.

55.			Cave I. 3	
WARP	S, Z-ply	(9)	linen, undyed	26.0 cm.
WEFT	S, Z-ply	(3)	linen, undyed	8.0 cm.
			coarse tabby, warp-faced	

Full width present, one fragment; Z-ply sewing threads hanging from it; probably sewn to tent as with no. 54.

56.			Cave I. 2	
WARP	Z, S-ply	(6)	bast, probably flax	8.5 cm.
WEFT	Z, S-ply	(3)	bast, probably flax	7.5 cm
			coarse tabby, warp-faced	

One fragment, both selvedges present.

COTTON AND FLAX

57.			Cave I. 8	
WARP (?)	Z	(12)	mixed cotton and flax	5.0 cm.
WEFT(?)	Z	(12)	mixed cotton and flax	4.0 cm.
			(tabby) ; no selvedge	

May be modern.

NET ?

58.		Cave I. 3	Pl. 90b
WARP	S, Z-ply	linen, undyed	
WEFT	S	linen, undyed	

A number of loops, 2 cm. long, fastened together to make a firm edge as in Fig. E; the wefts running through are of 6 threads used as one; the piece is tied in a knot at one end. The loops hanging down may be the beginning of a net.

STRING

Scraps of flax and cotton string of several thicknesses; one fragment three-plait, Z-ply string similar to thread used for buttonhole looping (no. 49), tied in knot.
One piece black hair tent-rope, circum. 2.5 cm., Z 3-ply of S-ply cords.

MODERN REJECTS

A. Ragged strip tweed type wool, mixed grey and brown shoddy, selvedge, traces cotton sewing. *Ryder*: British Down sheep.

B. Two pieces furnishing brocade, compound weave, warp and fine weft cotton, coarse weft wool, dull green, used as bag (?). Scrap black and white striped wool sewn to it.

C. Tiny fragment blue plain weave linen.

D. Shirting, cotton, two fragments white striped black, one fragment pink and white patterned, two plain white.

E. Piece of heavy rug or blanket, folded and tacked double, perhaps to use as a bag, warp, undyed cotton, wefts, purple and undyed wool stripes. *Cotton: Shirley Inst.* "doubled yarn having seven single yarn components." *Ryder:* " hairy medium wool."

F. Selvedge from braid or edge of thick cotton fabric, pale green. *Cotton: Shirley Inst.* " yarn of five single yarn components."

REPORT ON ANIMAL FIBRES

M. L. RYDER

The wools found at the Wâdī ed-Dâliyeh nearly all lack natural pigment and are comparable with previous samples of the first and second centuries A.D. from this area.[69] This does not necessarily mean that the Dâliyeh samples must be of the same date, because as yet wool cannot be dated from its type.

TABLE

Fibre diameter measurements (microns)

		Diam. range	*Mean*	*Mode*	*Distribution*	*Fleece type*
No. 2		10-24	16	16	symmetrical	true fine
No. 3		12-36	24	22	symmetrical	true fine
No. 4		12-32	21	20	symmetrical	true fine
No. 37	yarn (a)	14-48	25	20	skew fine	generalised medium
	yarn (b)	12-34	22	22	symmetrical	true fine
No. 38		12-32	19	16	skew fine	true fine
No. 39	yarn (a)	10-36	19	16	skew fine	true fine
	yarn (b)	12-46				
		1 @ 50	27	22 & 28	symmetrical yet ?	generalised medium
No. 40		12-40	24	22	skew fine	generalised medium
		56 & 58				
No. 42	yarn (a)	12-42	21	16	skew fine	generalised medium
		1 @ 54				
	yarn (b)	12-46	23	20	skew fine	generalised medium
No. 43	yarn (a)	14-46	27	24	skew fine	generalised medium
		3 @ 50				
	yarn (b)	14-34	21	24	skew fine	generalised medium
		3 @ 40				
No. 46	yarn (a)	10-42	23	20	skew fine	generalised medium
		2 @ 52				
	yarn (b)	12-48	21	16	skew fine	hairy medium
		54 & 80				
No. 48	yarn (a)	10-32	22	20	symmetrical	true fine
		1 @ 40				
	yarn (b)	10-26	17	16	symmetrical	true fine
No. 50	warp	12-140	36	20	continuous	hairy sheep
No. A		14-50	33	30	symmetrical	British Down

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[69] M. L. Ryder. " Fleece Evolution in Domestic Sheep," *Nature*, CCIV (1964), pp. 555-559.

The seven generalised medium specimens are typical of this type, and the one hairy medium wool (made so by only one hair) is not unexpected at a time when fleece type must have been variable. The high proportion of true fine wools (eight yarns) is noteworthy, as the generalised medium wool type predominated among the wool remains in the parchment from the Dead Sea Scrolls and the wool from the Cave of Letters.[70] The few true fine specimens among those remains suggested that this type was only then emerging. But if indeed some of the Dâliyeh specimens are as old as 331 B.C. (e.g. Nos. 2-4) then the origin of the true fine wool can be pushed back several centuries. The extremely fine range found in No. 48 yarn (b) and No. 2 has been found before in Roman wool from Mainz.[71] The unusual skewed-to-fine distribution of No. 39 yarn (a) and No. 38 was also found in fine wools from the Saxon boat burial at Sutton Hoo.[72]

It was suggested by Ryder [73] that the true fine wool might have arisen from the generalised medium wool by a gradual replacment of the medium fibres by fine fibres, thus giving a symmetrical diameter distribution. This skewed-to-fine distribution in the fine range suggests a general narrowing owing to poor nutrition rather than to genetic change. In other words these might possibly represent a generalised medium type of fleece that had become finer owing to poor nutrition.

The weft of A has a distribution not found before in antiquity. It is characteristic of the present-day British-Down-type fleece, and so may represent a more recent intrusion.[73a]

Tent-yarn no. 50 yarn (b) (warp) has the distribution of a hairy sheep, and has coarser hairs than the Altai sheep.[74] The weft of no. 57 is from a brown sheep with fine hairs, and is comparable with the hairy medium wool of Ryder.[75] The yarn (a) (weft) of no. 50 and the tent fabric no. 51 are dark brown and very coarse, with a mean diameter of about 100 microns. The lack of latticed medullation indicates that these are not sheep or goat hairs, and the tendency for the pigment to be concentrated towards the centre of the fibre, when viewed in cross-section, suggests camel hair. These hairs are coarser than the camel hair of modern commerce, which comes from the Bactrian camel; the specimens therefore appear to accord with the coarser hair of the Dromedary. I am grateful to Mr. H. M. Appleyard for confirming the suggestion that this is camel hair by surface scale impressions.

REPORT ON THE DÂLIYEH SKIN

M. L. Ryder

Samples A (Pl. 91a) and B (Pl. 91b-d) were thicker than sample C, but the thickness was not as great as that of cattle skin. They had the typical dark brown color of vegetable-tanned leather, and produced a brown coloration of the fluid of Ryder [76] that is used to soften the specimens preparatory to sectioning.

Sample A had some irregularly-spaced round holes along a straight edge, which could have been stitching holes; but sample B had similar holes, away from the edge, and also had some pits in the surface, which led to the interpretation of these holes as being due to decay or other attack. Care must obviously be taken in interpreting such holes as being made during life by the larvae of the warble fly as has been done by Chaplin.[77] Sample C, besides being thinner, was paler in color and produced no coloration of the softening fluid.

The sections of samples A and B stained maroon with the staining method of Ryder,[78] which is the color associated with vegetable-tanned leather, particularly following deterioration owing to burial. Sample C, on the other hand, stained green, which is the color obtained when this method is used with fresh skin and oil or alum-tanned leather.

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[70] Ryder, *op. cit.*

[71] M. L. Ryder, "Wools from Antiquity," *Textile History*, V (1974), pp. 100-110.

[72] M. L. Ryder, "The Sutton Hoo Wool" (forthcoming).

[73] Ryder, "Fleece Evolution" (1964).

[73a] This has since been found among Roman wools from Northern Europe.

[74] M. L. Ryder. "A Specimen of Asiatic Sheepskin from the 4th or 5th Century B. C.," *Australian Journal of Science*, XXIV (1961), pp. 246-248.

[75] Ryder, "Fleece Evolution" (1964).

[76] M. L. Ryder, "Remains Derived from Skin," *Science in Archaeology*, edd. D. R. Brothwell and E. S. Higgs (London, 1963), pp. 529-44.

[77] R. E. Chaplin, "Animals in Archaeology," *Antiquity*, XXXIX (1965), pp. 204-211.

[78] Ryder, *op. cit.*

Microscopic examination of the sections of A showed a few large follicle holes, but no hairs. Similar follicle remains were seen in the sections of B; these tended to be arranged in groups, and there were also some well-preserved fine, non-pigmented wool fibres, with prominent scale edges. The grouping of the follicle remains points away from cattle, and the large follicles indicate coarse hairy fibres like those in the goat or a hairy sheep.

Sample C had clearer groups of follicle remains, and more fine wool fibres like those in sample B. A few fibres of medium diameter were seen in the large follicle holes, and it was at first thought that this was from a sheep with a generalised medium type of fleece, which was identified by Ryder[79] in skin dated second century A.D. from caves near the Dead Sea. It was noted, however, that the large follicles were similar in size to those in samples A and B, and that these medium fibres had brush ends which are formed preparatory to molting. They thus appeared to be hairy fibres that had narrowed preparatory to shedding, and so the three specimens were probably from the same type of hairy sheep or goat. This skin therefore appears to have come from a goat or the sheep which produced the hairy fibres used in some tent fabrics, and not from the sheep from which came the finer wool of the other textiles.

REPORT ON THE DYES

G. W. MIDGELOW

Linens Catalogue Nos. 2, 3 and 5.

The only coloring matter I have been able to recognize in these patterns is indigo. I found this in the greenish blue wool in no. 3, and in the navy blue, dark brown and khaki colored wools in no. 2. I was unable to recognise the red in no. 2. I can say fairly positively that it is not madder.

It is possible to extract yellowish natural coloring matter from the linens, but whether this is added or not I cannot say.

Wool Catalogue No. 37.

The coloring matter on this behaves very similarly in solubility in solvents to madder but the color reactions are different. It is identical in reactions with purpurin, but to confirm this identity absolutely we would need a much larger sample. Purpurin is a component of the coloring matters present in madder but its isolation is somewhat difficult. I am unable to suggest what is likely to be the actual source of this product. As a matter of interest it may be worth adding that Perkin and Everest in their book *The Natural Organic Colouring Matters* state that purpurin occurred in the root of the munjeet (*Rubia cordifolia*) which was formerly extensively cultivated in India.

No. 38. The coloring matter present in this appears to be madder.

Nos. 39 and 40.

These are both the same; the coloring matter present is a mixture of the red found on no. 37 (see above) and indigo.

No. 42.

The coloring matter in this is mainly indigo. There is also a small amount of madder present.

Nos. 43 and 48.

It was found possible to extract a small amount of yellow coloring matter from each of these, but in neither case were the reactions of this coloring matter sufficiently characteristic for me to recognise it.

ADDITIONAL STUDY OF THE DYES

Professor M. C. WHITING
and Mr. TAKEO SUGIURA

Six of the samples can be described briefly:

39: Madder (rich in purpurin) plus indigo.

42, 43: Nothing identified.

2, 4: An unidentified violet colour, which we did not succeed in dissolving, was present.

37: was divided into yellow warp threads (9 mg.) and pink-brown weft threads (6 mg.)

37 weft: This contained a soluble dye tentatively identified by Midgelow as purpurin, and which did resemble purpurin sufficiently that we can understand his views. Absorption spectra (e. g. λ_{max} 513 nm in methanol, cf. 485 nm for purpurin) rule this out. A closer match would be alkannin, from *Anchiusa tinctoria* (λ_{max} 510 nm in methanol). At this point, however, we found that the literature on this natural dye was deficient; at least one other dye, probably closely related to alkannin and spectroscopically similar, is present in alkannet root, and its structure appears not to be known. The dye in this sample is chromotographically similar to this unknown material, rather than to alkannin. An attempt at mass spectrometry showed that this unknown compound is of high molecular weight (>500), and a peak in the same region (but not at the same position) was obtained from the textile sample. Clearly, a serious investigation of alkannet root is called for; and to this end a supply has been obtained. When we understand this dye we may well be able to reach definite conclusions on the textile sample; meanwhile we can say that the latter is probably dyed with alkannet or a related species, certainly not with madder, munjeet, kermes, lac, or cochineal.

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[79] M. L. Ryder, "Fleece Evolution in Domestic Sheep," *Nature*, CCIV (1964). pp. 555-559.

In this sample, indigo was also detected (abut half as much as the possible alkannin, in molecular amounts); so was some of the yellow denoted YV below.

37 warp: This was dyed with an unidentified yellow which we called YV, available in larger quantity from:—

48: a large (40 mg.) tightly woven textile, strongly yellow in colour. Extraction gave solutions having little colour and no definite spectra, but on chromotography a small quantity of the dye discussed above, possibly alkannin, was detected, along with a yellow similar to YV. A large part of what little colour could be extracted formed a streak, on chromotography, indicating a very large number of related compounds. The behaviour of this sample was consistent with extensive polymerisation of the dye originally present, most of the dye now being covalently attached to the fibres.

REPORTS ON SHOES AND LEATHER FRAGMENTS (Pl. 91)

JOHN H. THORNTON

General Comments

The fragments appear to fall into three groups (numbered below as 1, 2 and 3) quite apart from any exact provenance.

1. Shoe Soles: One nearly complete right foot; three or four fragments possibly belonging to the corresponding left foot; three small fragments one of which could be from the waist part of a sole with perhaps part of a heel attached to it.

2. Shoe Uppers: Thirteen small fragments which seem to be more associated with uppers than with soles.

3. Unidentified: Triangular elaborately stitched specimen, possibly harness or other equipment.

In 1. and 2. above I may have allocated pieces to the wrong section. There are two main problems here which I have also met in examining Romano-British and Medieval shoes, and also a third one:

(a) *Delamination:* Long burial sometimes produces " delamination " of the leather, that is to say the " grain " side (outside) and the " flesh " side (inside) of the skin or leather separate because the tannin never penetrated completely to the middle in the first place and this part deteriorates. In one specimen I handled (from York, C13 or 14) microscopic examination showed that two apparently different sections of leather were in fact the grain and flesh layers of the same piece, delamination having taken place.

I am almost sure that some of the present specimens are also laminate but I do not know whether decomposition of a middle partially tanned layer could take place in dry cave conditions.[80]

On the other hand, many of the hundreds of Romano-British soles I have handled do in fact consist of several quite thin layers thonged together, a practice still carried out in some African countries, so some of the laminae may in fact be complete in cross-section but have become very thin in drying out. If goat skin were used this would probably be essential; cow hide, being very much thicker, would not need building up.

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[80] Dr. Ryder considers build-up more likely than splitting, (a) because the dry conditions would probably not favour decay, and (b) because the sheep or goat skin used here would need building up into soles.

(b) *Pattern of Upper:* Today, and for several hundred years in Europe, upper patterns have followed fairly well defined lines and it is not difficult with experience to say how any part fits into the whole. With mediaeval boot and shoe uppers, however, the problem is more complicated since the shoemakers seem to have worked more on an ad hoc basis starting off with a single piece of leather, cleverly cut and then wrapped round the foot, odd bits being stitched in place as and where required to fill up gaps. These " odd bits " turn up in excavations and it is very difficult and sometimes impossible to say exactly how they fitted in; contemporary illustrations never show such fine detail as this. The same problem arises with the Dâliyeh shoes with the added complication that I don't know what I am looking for!

(c) The third problem is the extremely fragmentary nature of the pieces, particularly the presence of many holes. Some of these are identifiable as thong holes but the others may be due to micro-organisms.

Perhaps the most exciting feature as far as I am concerned is the fact that the nearly complete sole (1.1) has a stitching seam round it of exactly the same sort that is found in British shoes from the 5th century Saxon invasions onwards. All the Romano-British shoes I have examined have had nailed-on soles (except where they have been wrap-round moccasin types) and it almost seems that when the Romans went home they took nailing with them.[81]

The seam in the Dâliyeh shoe shows it was made by the *turnshoe* method, i. e. upper and sole stitched together the wrong way round and then " turned," the method which was introduced to Britain, apparently, by the Saxons and which remained the standard method of shoemaking until about 1500 (it is still sometimes used). It is a method which I have always associated with N. W. Europe as it lends itself to a complete foot covering (moccasin) for cold weather. Warm countries have *sandals* where the main concern is to hold a thick sole *under* the foot by any convenient method. In my book I propose the theory that the Romans on arrival in Britain combined their own sandals with native moccasins and the shoe proper was born.

So this discovery of a turnshoe in the Middle East has given me much to think about. The fact that dry cave conditions have also preserved the actual thread is also very interesting because thread rarely survives wet burial.

One of the upper (?) fragments (2.1) has two sections joined together with a very fine seam; it could be a toe cap but I am not sure. (I have not tried to identify the thread but I expect it is a bast fibre of some kind).

Detailed Examination

1. Shoe Soles (*Ryder,* leather sample B)
Pl. 91b-d.

1.1 Right foot, turnshoe sole with edge-flesh stitching channel (*ca.* 5 stitches per inch in the forepart and *ca.* 4/1 in. at seat), thread still in situ. There is a trace of upper at one point near the back. A separate " clump " sole attached by thonging at forepart and a seat/waist piece similarly attached at seat; these may both be later repair additions as they appear to cover large holes and have themselves worn through later on; the seat is worn most on the outside (right side) as in a modern shoe after wear. The specimen shows the big toe depression very clearly. The hole is very deteriorated, particularly on the flesh side (upper surface next to the foot) with possible delamination. Present size is about 7¾ in. x 3½ in. across tread. Ignoring shrinkage during drying and losses due to wear and deterioration the original size would have been about 8 in. x 3½ in., corresponding to a modern size 12's (children's).

1.2 Left foot turnshoe sole, forepart only; thonging suggests that a repair clump has been added but has now gone; further confirmation is given by the fact that although some stitching remains in a raised rib about ¼ in. from one edge, the thonging cuts right through so must have been put in later. Stitching very coarse, ca. 2/1 in. Big toe depression very prominent. Signs of burning. May be fellow sole to 1.1.

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[81] I have written about all this in my *Textbook of Footwear Manufacture,* 3rd ed. (London, 1964), ch. 3.

1.3 Small fragment which could be part of 1.2 at the rear edge.

1.4 Possibly the toe end of a thonged repair clump; may have been added to 1.2.

1.5 Seat end of a bottoming part, possibly a flesh lamina of the original sole and not a repair as there are stitching holes round the edge, ca. 4/1 in. Thong holes near one side and the front edge suggest that a repair has been added (as in 1.1). The large holes at the back have an almost cut appearance. This part may belong to 1.2.

1.6 Seat end of a sole plus a possible clump. May be part of 1.2. (1.2-6 have been assembled together in a conjectural reconstruction on Pl. 91b).

1.7 Narrow specimen consisting of two quite thick sections thonged together. Could be the front part of a heel joined on to the waist. 2 in. wide x $1\frac{1}{4}$ in. long (front to rear).

1.8 Very small fragment—two pieces with thonging.

2. Shoe Uppers (fragments)

2.1 Possibly a toe cap or toe end of an upper; two pieces close-seamed together, 8 or 9/1 in. (a "close seam" is a standard shoemaking seam in which the two pieces are put together face to face, stitched down one edge and then opened out and flattened).

2.2-2.12 Unidentified fragments; very thin, many holes.

3. Unidentified stitched specimen (*Ryder*, leather sample A; Pl. 91a)

A segment, $3\frac{1}{2}$ in. x $1\frac{3}{4}$ in. An additional strip is attached by three rows of stitching round the curved edge; stitches ca. 10/1 in. and rows 3/32 in. apart. Another seam along the straight edge is much coarser, ca. 4/1 in., joins on two other sections meeting in the middle by possibly a butted seam (edge to edge); traces of these sections remain. I cannot at present identify this specimen.[82]

4. Other unidentified specimens (*Ryder*, leather sample C)

4.1 Possibly an upper fragment; very thin but the thong holes and waved edge may indicate that it is the remains of a clump sole (as in 1.1).

4.2 Possibly an upper fragment; thread in situ at one place ca. 5/1 in.; simple overstitch.

BASKETRY

Elisabeth Crowfoot

The basketry techniques of the Mediterranean and Near East have changed very little over the centuries, and the scraps found in Cave I (Pl. 92), though small and deteriorated, are recognisable in most cases as coming from types frequently recorded from other deposits. Identication of the fibres employed was very kindly undertaken by the Royal Botanic Gardens, Kew.

Coiled basketry, probably the earliest type of basket making known, is here represented by two scraps; the materials identified in these pieces, palm for the coarser one (no. 1) and a grass core with sedge wrapping strip for the finer (no. 2), are those commonly in use on earlier sites in the region.[83]

The specimens of plaited basketry (nos. 3-7) are very similar to those found in the Cave of Letters; an excellent detailed description of the method of making them has been published.[84] On Professor Yadin's analysis all our pieces are from baskets, not mats, since all the edges have cords. The oversewing of the edge of no. 3 does not appear on his examples.

The piece of twined work in cords of sedge (no. 8) does not resemble any type of twined rush matting recorded. Baskets of rush cords caught by rows of twining have been found in Pharaonic Egypt,[85] but the wide spaces between the warp cords make our fabric too open for a similar bag or basket. The pieces could come from a coarse carrying net, but it seems probable that they were part of the woven seat of a stool.

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[82] Analysis of liquid extracted from leather sample no. 3 was made by the Department of Leather Manufacture. Northampton College of Technology, who report: "There are only slight indications of the presence of active vegetable tans—this is not surprising considering the age and exposure of the sample, when active tan would be lost by (i) oxidation and (ii) some gelatanisation of the leather. I. F. analysis indicates polyphenols and formaldehyde tests classify as pyrogallol, probably valonia, galls etc."

[83] *Jericho I*, pp. 524-525.

[84] *JDS*, chapter 8, pp. 137-139.

[85] W. M. F. Petrie, *Objects of Daily Use* (London, 1927), Pl. XLI.157, 18th dynasty; H. E. Winlock, *Excavations at Deir el Bahri* (New York, 1942), Pl. 94.

The few strands of vegetable fibre (no. 9) found with the linen on the left femur of a skeleton lie together in small parallel stems, and probably come from a fine matting of the plain weave type.[86] The fibres were identified at Kew as Spanish Broom (*Spartium junceum*). Though it does not seem to have been identified in archaeological material in Palestine before, this plant occurs in the country today in a number of localities, and the young shoots are commonly used in the Mediterranean area for matting nets and basketry.

This fine matting is the only piece among the basketry that, because of the position in which it was found, can certainly be assigned to the occupation of the cave by the Samaritan refugees, though it is possible from their condition that the fragments of coiled basketry are older than the plaited palm work, and may also belong to the earlier occupation. These plaited baskets almost certainly belong with the Roman layer.

CATALOGUE OF BASKETRY

Coiled Basketry

1. Cave I.3 Pl. 92a

A fragment 6 cm. long from a coarse coiled basket, the coil of date-palm leaf (*Phoenix dactylifera*), the wrapping strip of the same. The strip does not pierce the strip on the preceding coil. Cf. Murabba'ât, *DJD II*, p. 63.

2. Cave I.3 Pl. 92b

A circle of two rows of fine coil from the base of a small round basket or mat; the centre is missing; the coil is of grass (unidentifiable) and the wrapping strip of a sedge (*Cyperus*). The strip regularly pierces the strip on the preceding coil; the workmanship is good.

Plaited Basketry

3. Cave I.3 Pl. 92e

A piece ca. 25 x 15 cm. at the deepest part from the side and edge of a plaited basket, made of date-palm leaves. The plait is of 9 weavers, width of plait 3.5-4 cm., the cords of S-twisted palm fibre. The edge, with a similar cord, is also strengthened with an oversewing of two strands of similar S-ply palm thread. The handle is made of 3 thicker S palm cords, and has two reinforcing cords threaded through the plaits. Cf. *JDS*, p. 136 ff.

4. Cave I.2 Pl. 92f

A fragment, ca. 16 x 9 cm., from the edge of a similar basket; plait of 9 weavers, 4 cm. wide; the edge has a cord but no oversewing.

5. Cave I.3 Pl. 92c

Four fragments, the largest ca. 8.5 x 5 cm., from the edge of a slightly coarser basket; plait of 9 weavers, 4.5 cm. wide; edge cord thicker and harder twisted, no oversewing. One fragment, 4.5 x 6 cm., has part of handle of 3 cords, and ends of 2 reinforcing cords.

6. Cave I.8 Pl. 92d

Carbonized fragments from finer basket, including piece of edge, 7 x 2 cm. with S cord; if the plait had 9 weavers its width would have been ca. 2.5 cm.

7. Cave I.2, 3, 8 Pl. 92g

Various fragments of palm cord from reinforcing strands, handles, and pieces of palm string.

Twined Basketry

8. Cave I.3 Pl. 92h

A piece of thick S-twisted rope, identified as made of a species of *Cyperus* (sedge), 11 cm. long, with remains of 5 slightly finer cords passing through the twist at intervals varying from 1.5-2 cm. Either from a coarse twined basket, or the matting top of a stool or bed.

Matting

9. Cave I.4-5

A few strands, identified as stems of *Spartium junceum*, Spanish Broom, probably from a fine matting, found with textile on the left femur of a skeleton. 1.8 cm. long. Cf. *Jericho I*, pp. 524, 525.

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[86] *Jericho I*, p. 524, S. 32.

WOOD

A. C. Western

The group consisted of about 1000 pieces of wood from Cave I, Mughâret Abū Shinjeh. The condition of the wood varied from excellent, such as might have been cut from the tree yesterday, to the very decayed, including a number of pieces damaged by boring creatures of various kinds. In view of the large number involved it was obviously impossible in the time available to examine every piece, so a selection had to be made. Pieces of wood were picked out and grouped according to their similarity to each other to the naked eye, by bark, color, etc., making 15 different groups A to P, and including all types and all stages of preservation (Table 3). They were selected, when there were many superficially alike, to provide as good a range of size as possible, from the smallest twigs to branches up to 3 cm., thick. In practice this grouping proved to be of little significance, and the external appearance was misleading. The heavy preponderance of the two genera *Spartium* and *Retama* showed itself in the early stages, and finally one or both of them occurred in every group except one. A sixteenth group consisting of pieces of wood with signs of working or use upon them was also made (Table 1 and Pl. 93-94). Some had been shaved or whittled, some had one end shaped to a tang, some had definite axemarks, and one had been turned. One piece of naturally straight wood with regularly spaced nodes had probably been utilised just as it was. A possible use for such pieces was as stretchers between the legs of a stool, the tang fitting into a slot in the leg. The variety of woods represented among these few pieces (14) implies that if this was indeed their purpose they probably came from several pieces of furniture since the habitats of the woods used were so varied. On the other hand, the presence of a quantity of furniture seems doubtful, since there was little remaining to suggest the frame of the seat of a stool, although some of the thicker pieces may have been parts of the legs. However, a large number of pieces amongst the mass of wood specimens had been burnt at one end or both ends, so it is possible that the better pieces had already been used as fuel.

The method of examination was as follows. On the sounder specimens one piece of wood about 1-2 cm. long, and if possible of the same thickness, was cut off. From the less well-preserved specimens two pieces of this size were removed. One end was trimmed absolutely smooth with a very sharp knife, giving a clean transverse section, and a tangential section was cut off also with a sharp knife, the piece finally being split to give a radial section. These three facets were then examined through a x 15 lens, a x 30 binocular microscope and, for the smaller details, a microscope of x 50 and x 100. The features as they were observed were picked out on a special punched-card key of woods from the Palestine area. The reason for preparing two small blocks of some specimens was that where preservation was poor it was found impossible to get a sufficiently clean cut to see the features, particularly on the cross section, and the only way to reveal these was to turn the block into charcoal, which would then normally break to a clean fracture on which details showed up remarkably clearly. About one quarter of the specimens had to be treated in this way.

Table 1. Specimens of worked wood. (Pls. 93-94)

1.	Paliurus probably
2.	Fraxinus
3.	Punica
4.	Spartium probably
5.	Grewia
6.	Vitex
7.	Arbutus
8.	Grewia
9.	Spartium
10.	Punica
11.	Cedrus
12.	Salix
13.	Salix
14.	Spartium

Table 2. Specimens of unworked branches, twigs and brushwood

	Genus	Definite Identification	Probable Identification	Total
Group I	Amygdalus	2	—	2
	Arbutus	1	—	1
	Cercis	3	—	3
	Genista	6	—	6
	Paliurus	—	1	1
	Spartium	84	15	99
	Viburnum	—	1	1
Group II	Anagyris	4	1	5
	Daphne	7	—	7
	Prosopis	1	—	1
Group III	Calligonum	—	1	1
Group IV	Calotropis	—	1	1
	Salvadora	1	1	2
	Pistacia	—	1	1
	Rhamnus	1	—	1
	Artemisia	5	3	8
	Populus	1	—	1
	Retama	122	17	139
	Capparis	—	2	2
	Lycium	3	—	3
	Atriplex	4	4	8
	Haloxylon	2	1	3
Group V	Punica	5	1	6
		252	50	302

Table 3. Unworked specimens grouped by macroscopic appearance

Group A.
Retama (5), Spartium (3), Haloxylon (1), Calligonum (1), Cercis (1), Punica (1), Salvadora (1), unidentifiable (1).

Group B.
Artemisia (2), Spartium (1), Atriplex (1).

Group C.
Retama (23), Spartium (14), Genista (2), Atriplex (2), Daphne (2), Anagyris (1), Viburnum (1).

Group D.
Retama (10), Spartium (5), Genista (2), Punica (1), Pistacia (1).

Group E.
Spartium (4), Retama (3), Atriplex (3), Amygdalus (1), Lycium (1), Artemisia (1), Genista (1).

Group F.
Retama (10), Spartium (10), Daphne (2), Punica (1), Cercis (1).

Group G.
Artemisia (4), Capparis (2), Calotropis (1), Atriplex (1), Daphne (1), Punica (1), Haloxylon (1), Populus (1), Paliurus (1), unidentifiable (4).

Group H.
Retama (43), Spartium (16), Genista (1), Amygdalus (1), Lycium (1), Arbutus (1),

Anagyris (1), Cercis (1), Rhamnus (1), unidentifiable (1).

Group J.
Spartium (8), Retama (4), Anagyris (1), Daphne (1), Salvadora (11), unidentifiable (1).

Group K.
Retama (11), Spartium (6).

Group L.
Retama (3), Spartium (3), Artemisia (1), Atriplex (1), Lycium (1).

Group M.
Spartium (8), Retama (3), Anagyris (2), Punica (2).

Group N.
Retama (16), Spartium (12), unidentifiable (2).

Group O.
Retama (4), Prosopis (1), unidentifiable (1).

Group P.
Spartium (9), Retama (2), Daphne (1), Haloxylon (1).

Conclusions

Twenty three genera are included in the list, of which six are represented only by doubtful determinations. Of the remaining eighteen genera two, *Spartium* and *Retama*, together amount to about 80% of the determination (78% of the overall total and 81% of the total of definite identifications). In the existing flora of the country there is only one species of *Spartium*, *S. junceum*, belonging to the Mediterranean flora and at present extending as far south as the Samaria district.[87]

There is some uncertainty as to whether there are one, two or more species of *Retama* to be found, and indeed as to their specific or subspecific status, but since it is seldom possible to distinguish species within a genus from the structure of the wood this not a matter of great importance. What is relevant is that species of *Retama* are recorded from the Samaria area also,[88] within the Mediterranean zone, as well as the eastern slopes of the Jordan valley, thus including the Irano-Turanian vegetation zone, all within a relatively small geographical area.[89] In light of new comparative material just received, it appears that a further genus, *Calycatome*, belonging to the Mediterranean flora, is also represented.

Of the remaining genera Group I comprises the representatives of the Mediterranean flora, Group II the Irano-Turanian, and Group III the Saharo-Sindian.[90] Group IV consists of genera of which different species are to be found in two or more of these vegetation zones, while Group V is the solitary representative of a cultivated tree, *Punica*, the pomegranate, which is thought to be a native of Iran and further east, and introduced into Western Asia and Egypt in remote antiquity.[91] It is almost certainly subspontaneous or naturalized in the Mediterranean area now, and the earliest record of it for Palestine is in the Middle Bronze Age tomb B35 at Jericho [92] and for Egypt the late 18th Dynasty ointment spoon.[93]

In the vicinity of the Wâdī ed-Dâliyeh the Irano-Turanian zone is extremely narrow,[94] so that the fuel collectors from the cave would probably cover parts of at least two vegetation zones during the course of a day's expedition. Boyko [95] subdivides this zone into two, along the line of the rift, but until we have further detailed study of the environment of the cave this adds little to our conclusions. Calotropis, Atriplex and Lycium indicate collecting on the floor of the valley on the lower river terrace, if not on the banks of the river although the cave is some 12 km. from the Jordan.[96] The number of species in Group I imply not only that the Mediterranean maquis may have been more extensive towards the east, to the edge of the Jordan rift, than it is now, but also that the refugees in the cave may have ranged a similar distance westwards as eastwards, even into what is still part of the Mediterranean vegetation zone.[97]

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[87] M. Zohary, *Plant Life of Palestine* (New York, 1963), p. 59.

[88] A. Eig, "Synopsis of the Phyto-sociological Units in Palestine," *Palestine Journal of Botany*, Jerusalem Series, III (1943-46), p. 194.

[89] Eig. *op. cit.*, p. 208.

[90] A. Eig, "The Phyto-geographical Subdivision of Palestine," *Palestine Journal of Botany*, Jerusalem Series, I (1938-39). pp. 4-12.

[91] A. de Candolle, *Origin of Cultivated Plants* (London, 1904), pp. 238-40.

[94] Eig. *op. cit.* (n. 90), p. 7.

[93] P. Jacobsthal, *Greek Pins* (Oxford, 1956), fig. 615, p. 187.

[94] Eig. *op. cit.* (no. 90), p. 7.

[95] H. Boyko, "A New Plant-geographical Subdivision of Israel, As an Example for South-west Asia. *Vegetatio: Acta Geobotanica.* V-VI (1954), pp. 309-318.

SEEDS AND FRUIT

A. C. Western

The seeds and fruits were identified as follows:

1. Large quantities of the hard endocarp of *Balanites* sp., probably *B. aegyptica.* Each one has a hole gnawed at the end, possibly by a rodent to get at the kernel inside. *B. aegyptica* is a relic of the Sudano-Deccanian flora still surviving in the southern part of the Jordan Valley close to the Dead Sea.

2. Large quantities of the hard endocarp of the drupe of the date, *Phoenix dactylifera*, still found growing in and near the oases of the southern Jordan Valley. These were all bored through and through, probably by a boring insect.

3. Small round endocarps of the drupes of a species of *Zizyphus*, possibly *Z. lotus*. These also have been pierced to gain access to the kernel. *Z. lotus* is found today on the slopes facing the upper and central Jordan Valley, while *Z. spina-christi* occurs round Jericho and the Dead Sea. It is impossible to determine the species with certainty from these seeds.

4. A few acorns, probably representing two different species, since one is much larger and thicker-shell than the others. Possible species of *Quercus* at present found in the Judaean mountains and Samaria are *Q. calliprinos* (evergreen) and *Q. infectoria* (deciduous). The condition of these surviving acorns is too imperfect for a specific determination to be made.

5. Fragments of the pod (pericarp) of *Ceratonia siliqua*, the Locust Bean. This occurs at present on the mountains of Judea and Samaria, along the eastern slopes of the hills and bordering on the Irano-Turanian zone.

6. Two seeds of a member of the family *Leguminosae.* These seeds resemble those of a large number of species and it is impossible to identify them further.

There are also three other different seeds which have proved impossible to determine.

It is worth noting that of these fruits and seeds all but the acorns are commonly eaten, and since there were large quantities of the "stones" of dates, *Zizyphus*, and *Balanites*, it seems reasonably certain that these were taken into the cave as food supplies. It has been suggested that all these fruits were hoarded in the cave by an animal, as a squirrel hoards nuts. However, the date (*Phoenix*) and the *Balanites* cannot have grown in the immediate locality and must have been brought from some distance away in the valley. It seems unlikely that any animal would carry its food several kilometres. Furthermore, the nibbled holes in the *Balanites* and *Zizyphus* seeds could have been made by the same animal, probably some kind of rodent, but the holes in the date stones were entirely different and were most probably made by a termite or some kind of boring insect. The small representation of *Ceratonia* is probably due to the fact that the whole pod would have been eaten, either by human beings or flocks of sheep or goats at the time or very shortly afterwards. In any case, the pods are not woody and hence little would survive. The few acorns may have come in attached to brushwood for fuel.

These identifications were very kindly made for me by Dr. B. Styles, of the Department of Forestry, Oxford.

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[96] F. M. Cross, Jr., "The Discovery of the Samaria Papyri." *Biblical Archaeologist,* XXVI (1963), pp. 110-121.

[97] Zohary, *op. cit.*, p. 112.

CRANIAL MATERIAL

Wilton Marion Krogman

In earlier studies of cranial material from Alishar (1937), Tepe Hissar (1940) and Çatal Hüyük and Tell el-Judeideh (1949), I have presented evidence that the basic cranial type in the entire circum-Mediterranean area (including Asia Minor) was the *Mediterranean* dolichocrans (long-heads): " The Mediterranean type appears to be earliest and therefore basic to North Africa, Egypt, East Africa, Palestine, Syria, Anatolia, and Iran " (1949). The time factor is from at least 5000 B.C., and probably earlier. Thus, for seven or more millenia, the relatively slender Mediterraneans have, typologically speaking, dominated the area above outlined.

The present cranial series, which in time fits into the last one-half of the first millennium B.C., is comprised of 31 male crania, 16 female crania. The male crania comprise the following: BS-1, 2, 3, 4, 5, 6, 8, 9, 12, 13, 17, 18, 20, 22, 24, 25, 26, 27, 28, 29, 30, 31, 32, 34, 35, 36, 37, 39, 40 (*sic*), 42, 47. The female crania comprise the following: BS-7, 11, 14, 15, 16, 19, 21, 23, 33, 38, 40 (*sic*), 41, 43, 44, 45, 46.[98]

In Tables I-IV are presented, for both sexes, the Cranial Measurements, the Cranial Indices, respectively. For each measurement and index the number measured (N), the mean ($\bar{X}$), and the Facial Measurements, and the Facial Indices, the standard deviation (S. D.) are given.

The cranial index (CI) for males is 75.25 and for females is 76.60. The males are basically dolichocranic (index 75 or below), the females weakly mesocranic (index 75-80). On the whole I should say the tendency is to long-headedness. There is, however, some variability worth noting: the male CI range is 68.98-80.23, the female CI range is 71.84-84.66. The normal female tendency to a slightly higher CI is evident. This is highlighted in the following frequency tabulation of the CI:

	Male (N = 30)	Female (N = 16)
68-69.99	2	—
70-71.99	2	1
72-73.99	6	3
74-75.99	9	5
76-77.99	3	3
78-79.99	5	1
80-81.99	3	1
82-83.99	—	—
84-85.99	—	2

It may be that there are three male skulls, CI 80-85.99, that suggest an Alpine (round-headed) element (see Krogman, 1949, p. 454 ff.), Certainly, however, the Mediterranean type is in ascendancy (19 males, nine females CI 75.99 or less).

Index	*Male*	*Female*
Cranial	Dolichocranic	Mesocranic (weak)
Height/Length	Orthocranic	Orthocranic
Height/Breadth	Metriocranic	Metriocranic
Auric. Ht./Length	Orthocranic	Orthocranic
Upper Facial	Mesen	Mesen
Nasal	Mesorrhine	Mesorrhine
Orbital	Mesoconch	Mesoconch
Palatal	Dolichouranic	Dolichouranic
Gnathic	Orthognathic	Orthognathic

The cranial type, male and female, is long-headed, of moderate cranial height, with an upper face that is moderately high and moderately broad, a nasal aperture and an orbit that are both moderate in height (female has high orbit) and in breadth, a narrow palate, and a straight, non-prognathic, upper-mid facial profile.[99]

Senyürek (1951a) has summarized the cranial data on the peoples of Anatolia as follows: [100]

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[98] The crania were measured at the American School of Oriental Research in Jordan by M. S. Chopra in summer, 1964. Due to unforeseen circumstances he was unable to prepare a report. In March, 1966, he turned the data sheets over to me and I worked on the report in summer, 1966. I have tabulated and calculated the data received by me, and have related the present material to other cranial series in space and in time. Mr. Chopra took plaster casts of dental arches, but the casts turned over to me were so badly broken and shattered as to be unreliable for study, and for measurement.

[99] In Pls. 95-96 are shown photographs of W. D. BS 1, BS 27, and BS 43. Pls. 95, 96a are of male dolichos, Pl. 96b is of a female brachy.

	Head L		Head B		CI	
	$\bar{X}$	Range	$\bar{X}$	Range	$\bar{X}$	Range
Chalcolithic						
Male (12)	189	179-197	138	129-148	73.1	66.5-81.0
Female (10)	184	168-196	134	122?-149	72.9	65.1?-82.3
Copper Age						
Male (33)	187	172-197	139	121-153	74.4	66.9-83.5
Female (18)	179	169-189	135	120?-149	75.5	63.8?-83.4
2000-1200 B.C.						
Male (22)	186	170-205	144	134-152	77.4	65.4-85.3
Female (13)	174	156?-187	141	133-151	81.1	71.1-96.8?

In similar fashion we may tabulate the present series: [100]

Male (31)	183	174-193	138	129-146	75.3	69.0-80.2
Female (16)	175	165-181	134	125-149	76.6	71.8-84.7

The trend from long-headedness to mid and round-headedness is a virtual continuum as we view the fit of the Jordan crania in time. But all along the Mediterranean long-headedness forms an unmistakable matrix. Therefore the Jordanian crania may well be typologically allied with the following Anatolian sites (Senyürek, 1951a):

Chalcolithic	Copper	Early Bronze	Hittite
	Ahlatlibel		
Alaca Höyük	Alaca Höyük	Alaca Höyük	
	Babaköy (Troy II)		
Büyük Güllücek			
			Karaoglan
Kum Tepe			
Kusura	Kusura [1]		Kusura
(Late C)	Masat Höyük		
	Polath [2]		Polath
	Dundartepe [3]		
	Kaledorugu [3]		
	Tekeköy [3]		
Seyh Höyük			
Tilkitepe	Tilkitepe		
Yümüktepe			
(Mersin)			

[1] Also 2000-1900 B.C.

[2] Level I is Early Copper.

[3] Near Samsun.

[4] Kültepe (not listed) is early 2nd Millenium B.C.

From Chalcolithic, to Copper; to Early Bronze, to Hittite, to first millenium B.C. it is quite possible that Jordan shared with Anatolia the stability and persistance of the Mediterranean type, along with the slow and progressive trend to more round-headedness brought in by a gradually spreading Alpine cranial type.

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[100] I have smoothed L and B to the nearest whole number and the CI to the nearest tenth.

Discussion

In broader perspective I would like now to give an over-view of the racial (cranial) history of proto-historic Asia Minor. This will be an adjunct, of course, to fitting the present material into a time-space framework.

In all reports available there is a basic agreement, viz., that two long-headed types and two round-headed types are recognizable. In more precise terms we have two dolichocrans and two brachycrans to observe. The dolichos are usually categorized as Mediterranean and Eurafrican; the two brachys as Alpine and Armenoid.

In Table V, I have summarized this cranial information. It is based mainly on Ferembach (1959, 1960, 1961), Krogman (1937, 1940a, 1949), and Senyürek (1941, 1946, 1949a, b, 1950, 1951a, b), with cross-checking to other references. In Table V there are four headings: 1) *P-M/M* for Proto-Mediterranean and Mediterranean; these are the small slender, less rugged dolichos; the Proto- means little more than the establishment of priority, for these are the earliest and most widespread dolichos; 2) *A-M*, *P-N*, *Euraf.* for Atlanto-Mediterranean, Proto-Nordic, Eurafrican;[101] these are the large, rugged dolichos, often contemporaneous with the smaller, less rugged dolichos; numerically, however, they are later than the Mediterraneans; 3) *Alp.* for Alpine; these brachys of increased cranial breadth; they are late-comers (ca. 2500 years after the first Mediterranean dolichos). 4) *Ar.* for Armenoid; these are also brachys, but round-headedness has been achieved more by noticeably diminished length rather than increased breadth; the vault is very high (hypsibrachycrany); these are very late-comers, for they do not figure numerically at least, in cranial-type history until mid-first millenium B.C. or later.

1. The smaller less rugged dolichos, for whom I prefer the term *Mediterranean*, are extremely wide-spread and are earliest (one might say indigenous to the total area observed). In Mesopotamia they are found at El-Ubaid, Jemdet-Nasr, and Kish; in Cilicia at Tarsus; in Iraq at Nippur; in Iran at Tepe Hissar, Sialk, Shah, Shah Tepe III, and Hasanlu; in Anatolia at Karahöyük, Alaca Höyük Dundartepe, Alishar, Kusura, Sardis, and Ahlatlibel; in Syria at Çatal Hüyük and Tell el-Judeideh and Carchemish; in Lebanon at Byblos; in Israel at Meggido, Gezer, Umm Qatafa, Es-Safadi, Mallaha, Tell el-Asawir, and Erq el-Aḥmar; in Jordan at Ain Jebrud, Jericho, and Wâdī ed-Dâliyeh.

2. The larger more rugged dolichos, for whom I prefer the term *Eurafrican*, are also widespread, but seem rather uniformly to be later arrivals, compared to the Mediterranean dolichos. In Mesopotamia they are found at Kish; in Cilicia at Tarsus; in Iran at Tepe Hissar, Sialk, Hasanlu and Yorgan Tepe; in Anatolia at Babaköy, Tilkitepe, Büyük Güllücek, Masat Höyük, Alaca Höyük, Kumtepe, Yumüktepe, Yortan Kekembo, Dundartepe, and Alishar; in Syria at Çatal Hüyük and Tell el-Judeideh; in Lebanon at Seyh Höyük; in Israel at Gezer; in Jordan at Ain Jebrud and Jericho.

3. The Alpine brachys are found in Mesopotamia at Kish; in Iran at Tepe Hissar; in Anatolia at Tilkitepe, Karahöyük, Alaca Höyük, Kumtepe, Arslantepe, Alishar, Troy I, and Hissarlik; in Syria at Çatal Hüyük and Tell el-Judeideh; in Israel at Umm Qatafa, and Tell el-Asawir; in Jordan possibly at the Wâdī ed-Dâliyeh.

4. The Armenoid brachys are found in Mesopotamia at Kish; in Iran at Tepe Hissar; in Anatolia at Alishar; in Syria at Çatal Hüyük and Tell el-Judeideh; in Israel possibly at Es-Safadi.

Important to observe is that at four sites *all four cranial types* are found: in Mesopotamia at Kish; in Iran at Tepe Hissar; in Anatolia at Alishar; in Syria at Çatal Hüyük and Tell el-Judeideh. Without exception these four sites proclaim the same sequence: Mediterranean, Eurafrican, Alpine, Armenoid.

The present site fits in with this sequence in that it presents the persistence of the basic Mediterranean dolichos plus the contemporaneous presence of the (later-arrived) Alpine brachys.

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[101] The Eurafrican is Caucasoid. The term really refers to a European-African distribution (circum-Mediterranean). Synonyms also used are Afghanian, "basic white," Caspian, hyper-dolicho, Cromagnard, and, as in Table V, Atlanto-Mediterranean and Proto-Nordic.

TABLE I

Cranial Measuresments (mm.)

Measurement	Male			Female		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
Max. lgth.	31	183.45	5.15	16	175.19	4.49
Max. brdth.	30	138.05	4.33	16	134.13	5.88
Min. frontal breadth	28	94.14	5.85	15	89.70	2.71
Basio-bregmatic ht.	27	131.07	4.38	13	125.85	3.24
Endobasion-nasion	25	100.26	5.75	11	95.27	3.55
Endobasion-prosthion	8	95.63	5.52	3	88.67	9.61
For. mag. lgth.	26	35.62	2.75	14	34.18	2.23
For. mag. brdth.	25	29.52	2.79	14	27.89	1.53
Auric. Ht.	27	111.81	2.87	12	108.33	3.55
Sag. arc.	26	369.38	10.09	15	357.13	9.91
Frontal arc	30	126.87	7.33	16	121.19	6.23
Parietal arc	31	127.55	5.89	16	122.59	6.51
Occipital arc	27	115.59	6.22	15	113.53	7.27
Trans. arc	27	301.91	8.74	10	290.40	4.50
Capacity (cc)	27	1,357.47	54.86	12	1,209.69	49.60

TABLE II

Cranial Indices (%)

Index	Male			Female		
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.
Cranial	30	75.25	3.10	16	76.60	3.70
Ht.-Lgth.	27	71.48	2.40	13	71.70	2.73
Ht.-Brdth.	26	95.16	3.95	13	95.49	3.24
Auric. Ht.	27	61.24	2.02	12	62.19	2.97
Fronto-Parietal	27	68.67	4.30	15	67.16	3.45
Foraminal	25	83.14	5.44	14	81.84	5.63

Table III

Facial Measurements (mm.)

Measurement	Male			Female		
	N	$\overline{X}$	S.D.	N	$\overline{X}$	S.D.
Upper face ht.	9	66.50	3.00	2	58.00	3.94
Mid-face brdth.	10	93.20	2.76	2	86.00	2.83
Bizyg. brdth.	9	125.67	4.42	1	118.00	—
Nasal ht. (na-ns)	10	51.10	7.27	3	46.67	6.89
Nasal ht.	10	50.77	2.52	3	46.00	1.80
Nasal brdth.	10	25.05	1.32	3	21.00	1.73
Orb. brdth. (O,L)	11	41.18	1.63	4	38.37	1.93
Orb. brdth. ($O_1{}^1L$)	11	38.86	1.66	4	36.63	1.89
Orb. Ht.	11	32.05	2.68	3	32.83	3.33
Ant. interorb. brdth.	10	19.00	3.11	2	16.25	4.06
Dacryal chord	10	21.80	2.96	2	18.00	3.71
Bi-orb. brdth.	9	91.61	2.30	2	84.25	3.89
Max-alv. brdth.	9	53.50	3.94	3	49.17	4.40
Max-alv. lgth.	5	62.70	3.15	1	57.50	—
Pal. lgth.	10	44.70	2.80	3	40.67	4.48
Pal. brdth.	8	35.25	2.48	2	33.75	3.35

Table IV

Facial Indices (%)

Index	Male			Female		
	N	$\overline{X}$	S.D.	N	$\overline{X}$	S.D.
Upper	8	53.29	2.93	—	—	—
Upper mid-face	9	71.43	4.52	1	69.05	—
Cranio-facial	8	91.45	4.02	1	91.47	—
Zygo-frontal	9	73.55	5.99	1	72.88	—
Ant. inter-orb.	9	20.18	2.93	2	19.28	3.37
Post. inter-orb.	9	23.62	3.09	2	21.37	4.15
Nasal (NB/NH′)	10	49.11	3.26	3	44.95	3.96
Nasal (NB/NHL)	10	49.45	3.51	3	45.60	4.16
Ant. orb.	11	77.89	6.67	3	85.86	10.15
Dacryo-orb.	11	82.58	7.42	3	90.13	10.05
Max-alv.	5	85.15	6.18	1	92.86	—
Palatal	8	77.90	5.51	2	78.04	6.46
Gnathic	8	96.87	2.94	2	97.79	4.56

Table V

Tabular Summary of Cranial Types of Early Asia Minor

	P-M/M	A-M/P-N Euraf.	Alp.	Ar.
Mesopotamia				
el-Ubaid [1]	x			
Jemdet-Nasr	x			
Kish [2]	x	x	x	x
Cilicia				
Tarsus [3]	x	x		
	(2000 B.C.)	3000 B.C.		
Iraq				
Nippur [4]	x			
Iran				
Tepe Hissar [5]	x	x	x	x
Sialk [6]	x	x		
Shah Tepe III [7]	x			
Hasanlu	x	x		
Yorgan Tepe [8]		x		
Anatolia (W = western, C = central, N = northern, S-E = Southeast, E = eastern)				
Babaköy (W)		x	x	
Tilkitepe (E)		x		
Büyük Güllücek		x		
		ca. 4000 B.C.		
Masat Höyük [9]		x		
Karahöyük [10]	x		x	
Alaca Höyük (C)	x	x	x	
Kumtepe [11]		x	x	
Yümüktepe [12]		x		
Arslantepe (S-E) [13]			x	

[1] 4th millennium B.C.

[2] Bronze (2900-2800 B.C.)

[3] 8 M Level 2000 B.C
Early Cemetery, prior to 3000 B.C.; assoc. with Chalcolithic of Northern el-Ubeid.

[4] 900 B.C. to A.D. 900.

[5] 4000 B.C.

[6] Chalcolithic to Iron Age.

[7] 3000 B.C.

[8] 3rd century A.D.

[9] Chalcolithic to Phrygian.

[10] End 2nd millennium B.C., beginning 1st millennium B.C.

[11] Chalcolithic.

[12] Chalcolithic; Senyürek compares the Eurafrican type to that of Combe Capelle (see footnote 20 below).

[13] Neo-Hittite.

Yortan Kekembo		x		
Dundartepe (N)	x	x		
Alishar (C)	x	x	x	x
Kusura (W)	x			
Ahlatlibel (C)	x			
Troy I (W)			x	
Hissarlik			x	
Sardis[14]	x			
Syria				
Çatal Hüyük	x	x	x	x
Tell el-Judeideh	x	x	x	x
	4000 B.C.	3rd mill.	2500 B.C.	500 A.D.
Carchemish[15]	x			
Lebanon				
Byblos[16]	x			
Seyh Höyük[16]		x		
Israel				
Megiddo[17]	x			
Gezer[18]	x	x		
Umm Qatafa[16]	x		x	
Es-Safadi[16]	x			x(?)
Mallaha	x (Natufian)			
Tell el-Asamar	x		x	
Erq el-Ahmar	x (Natufian)			
Jordan				
Ain Jebrud[19]	x	x		
Jericho[20]	x (Natufian)	x		
Wâdī ed -Dâliyeh[21]	x		x(?)	

[14] Lydian, Hellenistic, Roman, Byzantine.

[15] Early Bronze.

[16] Chalcolithic.

[17] Chalcolithic to Iron Age.

[18] Bronze I

[19] Bronze Age.

[20] Chalcolithic to Bronze; a second cranial type is recognized as Cromagnard, and is related to Combe Capelle (see footnote 12 above).

[21] Latter one-half first millennium B.C.

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REPORT ON ANIMAL BONES EXCAVATED IN THE WÂDĪ ED-DÂLIYEH CAVES

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A large number of human skeletons was recovered during the two seasons at the site, and these were collected together with a smaller number of animal bones which were presumably contemporary with the human remains. An analysis of the non-human material was made in the hope that this might shed some light on the habits of those who died in the cave.

COMPOSITION OF THE COLLECTION

There were 191 items in the collection. The majority of these were whole bones or groups of bones (such as the skull), but this number also includes bone fragments which could not be joined with any other item.

A. Cranial	57
B. Post-cranial	
i. Axial	73
ii. Girdle	9
iii. Limb	61

It was immediately evident that the bones spanned a wide period of time. It is impossible, by visual examination of bones from an unknown stratum, to determine their exact age, but bones which are older than twenty or thirty years acquire a gloss and an increase in weight which renders them unmistakably different from bones of more recent origin. It was possible to say with some certainty that 101 items in the collection were of recent origin. This number was made up in the following way:

SHEEP/GOAT	*SHEEP*	*GOAT*	*BOVID* (*COW?*)	*CARNIVORE*	*OTHERS*
1 maxilla	2 scapulae	2 skulls	2 cervical vertebrae	1 mandible	3 skulls
9 mandibles	1 pelvis	1 horn	13 thoracic vertebrae	1 humerus	1 maxilla
3 loose teeth			3 lumbar vertebrae		1 mandible
4 femora					1 loose tooth
3 tibia					6 thoracic vertebrae
5 metatarsals					
2 humeri					
3 radio-ulnaria					
4 metacarpals					
6 cervical vertebrae					
3 thoracic vertebrae					
18 lumbar vertebrae					
2 ribs					

Sixty-nine of the items were obviously from sheep or goats. Of these, three were definitely identifiable as domestic sheep (*Ovis laticaudata*) and three as domestic goat (*Capra mambrica*). The remaining items covered a size range which made it clear that four or five individuals of varying ages were involved. It seems likely, from the composition of these items, that the entire animals were brought into the caves and eaten there (probably by the Taʿâmireh bedouin). The loss of the remaining skeletal material may be attributed to decomposition and to the action of rodents and small carnivores.

Apart from the sheep/goat remains, there was also evidence of a species of bovine ruminant—probably the Arab cow. The items are of two distinct sizes and the lack of any but the vertebral remains suggests that portions of a calf and an adult animal were brought into the cave and consumed there. None shows definite signs of having been cooked, however.

Several of the items show evidence of human and rodent or carnivore teeth marks. One recent humerus (H. 4.) was identified as that of a small species of wild cat (possibly *Felis ocreata*) and one mandible (M. 31.) as that of the common mongoose (*Mungos ichneumon*). In addition to these, there was evidence of hyrax (*Procavia syriaca*; skulls S. 4 and canine tooth T. 7.), and of an unidentified rodent (skull

S. 5. and maxilla Mx. 6.), and the vertebrae and mandible condyle of an unknown ruminant (TV. 24-29. and M. 35.).

The remaining 90 items were all identified as belonging to a time prior to the recent findings of the cave. There is a strong possibility that the majority of these were contemporary with the human skeletal remains.

SHEEP/GOAT

1 skull
2 maxillae
15 mandibles
3 loose teeth
3 pelvis
3 femora
1 tibia
1 metatarsal
2 astragali
3 humeri
6 radio-ulnaria
4 metacarpals
1 phalange
6 cervical vertebrae
7 thoracic vertebrae
4 lumbar vertebrae
1 sacral vertebra
1 rib

SHEEP

3 scapulae

BOVID

1 skull
1 maxilla
1 mandible
2 loose teeth
1 astragalus
2 naviculocuboids
1 phalange
2 cervical vertebrae

EQUID

1 phalange

OTHERS

1 hyrax skull
2 hyrax mandibles
5 unidentified mandibles
3 gazelle metatarsals

It is possible that the bovid items (for instance) could have been derived from two individuals, but in any domestic site (even one as restricted as a cave), the probability is rather that most pieces belonged to separate individuals. The number of recognizable items may therefore be taken as representing the relative frequency of each species at this site.

SHEEP/GOAT	*BOVID*	*EQUID*	*GAZELLE*	*HYRAX*	*OTHERS*
67	11	1	3	3	5

Sheep or goat was obviously the main food item, occurring three times as often as all the others combined. The bovid fragments were derived from individuals of different sizes, but apparently the same species (either the domestic cow or buffalo [*Bubalus bubalis*]). The composition of the eleven items suggests that these, like the sheep, were taken complete into the caves and there consumed. The equid item (from horse or wild ass) is from a relatively inedible part of the animal, and no conclusions can be drawn from its presence. The presence of only parts of the hind leg of the gazelle (possibly *Gazella dorcas*), suggests that these limbs were brought back from the hunt as preferred portions. The hyrax probably entered the cave subsequent to the death of the human occupants, but it is worth noting that the Arabs today still consider the hyrax a delicacy.

DETAILED ANALYSIS OF THE OLDER ITEMS

A. CRANIAL FRAGMENTS

S. 3.	Complete skull of	Adult hyrax. Teeth characteristically lophodont.
S. 7.	Occipital area of	Bovid skull.
S. 8.	Occipital area of	Sheep/Goat skull.

Mx. 1.	Left maxilla with	M3. M2. M1. PM4.	Adult Bovid.
Mx. 3.	Right maxilla with	M3. M2. M1. PM4. PM3.	Adult Sheep/Goat.
Mx. 5.	Right maxilla with	— M2. M1. — —	Adult Sheep/Goat.

M. 1.	Left mandible with	—	—	M1.	PM4.	—	—		Adult Bovid.
M. 2.	Left “ “	M3.	—	—	—	—	—		Adult Sheep/Goat.
M. 3.	Right “ “	M3.	M2.	M1.	PM4.	PM3.	—		“ “ “
M. 4.	Left “ “	M3.	M2.	M1.	PM4.	PM3.	PM2.		“ “ “
M. 5.	Left “ ”	M3.	M2.	M1.	PM4.	PM3.	—		“ “ “
M. 6.	Right “ “	M3.	M2.	M1.	PM4.	PM3.	—		“ “ “
M. 8.	Left “ “	M3.	M2.	M1.	PM4.	PW3.	PM2.		“ “ “
M. 9.	Left “ “	M3.	M2.	M1.	PM4.	—	—		Juvenile Sheep/Goat.
M. 10.	Right “ “	M3.	—	M1.	PM4.	—	—		“ “ “
M. 11.	Right “ “	M3.	M2.	M1.	PM4.	PM3.	—		Adult Sheep/Goat.
M. 12.	Right “ “	—	M2.	M1.	PM4.	—	—		Juvenile Sheep/Goat.
M. 14.	Right “ “	—	M2.	M1.	PM4.	PM3.	—		“ “ “
M. 17.	Right “ “	—	M2.	M1.	PM4.	—	—		“ “ “
M. 18.	Right “ “	—	M2.	M1.	PM4.	—	—		Adult Sheep/Goat.
M. 19.	Left “ “	—	—	M1.	—	—	—		Juvenile Sheep/Goat.
M. 20.	Right “ “	—	M2.	—	—	—	—		“ “ “
M. 21.	Left “ “	—	—	—	—	—	—		Unknown.
M. 22.	Left “ “	—	—	—	—	—	—		Unknown.
M. 26.	Right “ “	—	M2.	M1.	PM4.	—	—		Juvenile Sheep/Goat.
M. 29.	Left “ “	—	—	—	—	—	—		Adult hyrax.
M. 3.0	Right “ “	M3.	M2.	M1.	PM4.	PM3.	PM2.	PM1.	Adult hyrax.
M. 32.	Right “ “	—	—	—	—	—	—	—	Juvenile hyrax.
M. 33.	Right “ “	—	—	—	—	—	—	—	Juvenile hyrax.
M. 34.	left and right “ “	M3.	M2.	M1.	PM4.	PM3.	PM2.	PM1.	Adult hyrax.

T. 1.	Upper right M2	of same type as mandible 1.	Adult Bovid.
T. 2.	Upper left M2	of same type as mandible 1.	Adult Bovid.
T. 3.	Lower right M3	of Adult Sheep/Goat.	
T. 4.	Upper right M2	of Adult Sheep/Goat.	
T. 5.	Lower left M3	of Adult Sheep/Goat.	

B. *LIMB AND GIRDLE FRAGMENTS*

Sc. 1.	Right scapula of adult sheep with no subacromial notch.
Sc. 2.	Right “ “ “ “ “ “ “ “
Sc. 3.	Left “ “ “ “ “ “ “ “
P. 2.	Left ilium of juvenile sheep/goat.
P. 3.	Left “ “ “ “ “
P. 4.	Right “ “ “ “ “
F. 1.	Right femur of adult sheep/goat.
F. 2.	Left femur of juvenile sheep/goat.
F. 3.	Right femur of juvenile sheep/goat.
T. 1.	Left tibia of adult sheep/goat.
Cb. 3.	Left metatarsal canonbone of adult gazelle.
Cb. 4.	Left “ “ “ “ “
Cb. 11.	Right “ “ “ “ “
Cb. 14.	Left metatarsal canonbone of adult sheep/goat.
Cb. 16.	Left “ “ “ “ “ “
Cb. 17.	Right “ “ “ “ “ “
As. 1.	Astragalus of adult sheep/goat.
As. 2.	“ “ “ “ “
As. 3.	“ “ “ bovid.

Ph. 1.	Phalange of juvenile horse/wild ass
H. 1.	Right humerus of adult sheep/goat.
H. 5.	Right “ “ “ “ “
H. 6.	Left “ “ “ “ “
Ru. 1.	Right radio-ulnare of adult sheep/goat.
Ru. 2.	Left “ “ “ “ “ “
Ru. 4.	Left “ “ “ “ “ “
Ru. 5.	Right “ “ “ “ “ “
R. 1.	Left radius of adult sheep/goat.
R. 2.	Right “ “ “ “ “
Cb. 1.	Left metacarpal canonbone of adult sheep/goat.
Cb. 2.	Right “ “ “ “ “ “ “
Cb. 16.	Left “ “ “ “ “ “ “
Cb. 17.	Right “ “ “ “ “ “ “
Ph. 2.	Phalange of adult bovid.
Ph. 3.	Phalange of adult sheep/goat.
No. 1.	Naviculocuboid of adult bovid.
No. 2.	“ “ “ “

C. *AXIAL FRAGMENTS*

C. V. 1.	Atlas of adult sheep/goat.
C. V. 8-9.	Axes of adult sheep/goat.
C. V. 10.	Axis of juvenile bovid.
C. V. 11, 12 and 14.	Cervical vertebrae of adult sheep/goat.
C. V. 15.	Atlas of adult bovid.
T. V. 14.	First thoracic vertebrae of adult sheep/goat.
T. V. 15-18, 20, 22.	Thoracic vertebrae of adult sheep/goat.
L. V. 19-22.	Lumbar vertebrae of adult sheep/goat.
S. V. 1.	Two sacral vertebrae of adult sheep/goat.
Rb. 3.	Rib of adult sheep/goat.

CONCLUSIONS

1. Although the bones are clearly separable into the categories “very recent” and “less recent,” not all those in the second group can be indisputably determined as contemporary with the human remains. From an examination of the items listed above, it would appear that there have been human occupations of the cave after the death of the Samaritans and prior to the recent discoveries.
2. The composition of the older bone items shows an overwhelming preponderance of remains from domestic animals (mainly sheep and goats). The majority of these were slaughtered when adult, but none was very old. None of the items gives any indication as to the method of slaughter employed, and none show good evidence of having been cooked. There is also no indication that any of the items were used for industrial purposes.
3. The primarily domestic composition of food suggests a settled rather than a nomadic mode of life, but the scarcity of the remains in the cave is inconsistent with any prolonged period of ocupation (unless the occupants were primarily vegetarian!).

MISCELLANEOUS SMALL FINDS

George W. E. Nickelsburg, Jr.

Wooden Bowls and Lids (Pls. 31: 1-8 and 97a)

Fragments of six wooden bowls were recovered, three from Cave I and three from Cave II. Similar bowls were found in the Cave of Letters of the Judean desert caves and at Murabbaʿât.[102] Pl. 31: 5 has a molded rim and was lathe-turned like similar bowls from the Cave of Letters.[103]

Fragments of two small lathe-turned lids for cylindrical boxes were found. Pl. 31: 7 would fit the notched rim of a cylindrical box with an exterior diameter of 3.45 cm. Such a box, containing traces of rouge, and a lid of slightly larger diameter were found in the Cave of Letters.[104] Pl. 31: 8 is drawn upside down; note the groove to fit the notched rim of a cylindrical box with an exterior diameter of 3.8 cm.

Wooden Combs (Pls. 32: 1-3 and 97b)

Three wooden combs are shown in Pl. 32. Two, Pl. 32: 1 (Cave II) and Pl. 32: 3 (Cave I), are of the type common in the Roman Empire and have numerous parallels among the combs from the Judean desert caves.[105] Teeth of these combs are coarse on one side and fine on the other. The ends are convex, but sometimes flattened at the tips like those of Pl. 32: 3.

Pl. 32: 2 from Cave I is a piece of an MB II comb. Numerous examples of this type were found in MB II tombs at Jericho [106] and two examples occur in the MB context in Murabbaʿât Cave 2.[107]

Knife Blade (Pls. 32: 4 and 97b)

In the cache of objects found in Room 4 of Cave II (Pl. 43c) was a badly rusted and fragmented iron knife blade. It had been set in a wooden handle (which was missing) and fastened by rivets and a metal collar. This kind of attachment is found in a number of knives and sickles from the Cave of Letters.[108] The drawing suggests a double edge.[109]

Handles from Elbow Keys (Pls. 33-34 and 98)

From the same cache Cave II: 4 (Pl. 43c), came eight wooden handles, one with parts of the arms of the key, the others with fragments of the fangs still extant. The handles, all in a bad state of preservation, are of two types: lathe-turned (Pls. 33 and 98a) and carved (Pl. 34 and 98b). Both types of handles and the keys to which they were attached are known from the Cave of Letters,[110] and an example of the lathe-turned handle was found in Murabbaʾât, Cave 1.[111] The iron arms of Pl. 33: 1 are badly rusted, and it is uncertain whether the lower piece in the drawing is, in fact, the forearm of this key.[112] Pl. 34: 1-4 are crudely hand-carved handles, similar to those found in the Cave of Letters.[113]

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[102] Cf. *JDS*, Fig. 50: 9-12. 14; *DJD II*, Fig. 8: 5.

[103] *JDS*, Fig. 50: 9, 10.

[104] *JDS*, Fig. 51: 3 and Pl. 36: 3; description, p. 124, with further references in notes 5, 7.

[105] *JDS*, p. 130, n. 22; see also F. Petrie, *Objects of Daily Use* (1927), Pl. 20, cited by de Vaux, *DJD II*, p. 44, n. 1. Parallels are shown from Cave of Letters, *JDS*, p. 130, Fig. 51: 17; Cave of Horror, *IEJ*, XII (1962), pp. 192 f., Pl. 26 C-D; Cave of the Pool, *IEJ*, XII (1962), p. 178, Pl. 19A: 2; *IEJ*, XI (1962), p. 10, Pl. 3B; p. 178, 19A: 2; *IEJ*. XI (1961). p. 10, Pl. 14: 9-10. The last two, with their simple convex ends, are the closest to Fig. 32: 1.

[106] K. Kenyon's type II.B.1 (see *Jericho I*, p. 298; *II*, p. 201). Closest parallels are:

Jericho I, Fig. 134: 5 (Tomb G 46); Fig. 221: 1 Tomb H 11); Pl. 29: 5, 6 (Tomb H 11); Fig. 221: 9, 10, 11 (Tomb H 22;

Jericho II, Fig. 142: 4 (Tomb P 23); Fig. 243: 5, 7 (Tomb G 73).

[107] *DJD II*, Fig. 5: 1-2, and Pl. 7: 3-4. Note same pattern of incised lines. See de Vaux's discussion, p. 23, where (n. 9) he cites the Jericho parallels (on the preliminary publication), and another parallel from a XII dynasty context in Egypt (n. 8), published by Petrie, *Objects of Daily Use* (London, 1927), Pl. 20: 16.

[108] *JDS*, Figs. 30-31.

[109] Because of the badly fragmented condition of the blade, its exact shape is uncertain. However, see Petrie, *Tools and Weapons* (London, 1917), p. 26, where he discusses the double convex shape, and see Pl. 31: 65.

[110] *JDS*, Figs. 35-37 and Pl. 26, and the discussion, pp. 94-100. The handles in Fig. 36 are the closest in size to the Dâliyeh lathe-turned examples. Note also the incised lines, the slightly flared shape of the shaft, and the ridge at the base of the knob (cf. Pl. 33: 2-3 of this volume).

[111] *DJD II*, Fig. 10: 7 and Pl. 12: 8.

[112] The problem is in the shape of the lower piece. Normally, in keys of this type, the bend from the forearm to the bit is perpendicular to the plane of the bend from the upper arm to the forearm. See *JDS*, Pl. 26, and p. 95 for an explanation of how this shape enabled one to move the bolt from the outside of the door. For a different arrangement of the arms on interior keys, see Petrie, *Tools*, Pl. 76: 165, 199, 201. See also his remarks on No. 193.

Bronze Jug Handle (Pls. 35 and 99)

This type of handle was found on fourteen bronze jugs uncovered in the Cave of Letters.[114] Although none of these handles is an exact parallel to the Wâdī ed-Dâliyeh example, a number of the latter's features are found in that group. The arms are undecorated.[115] The flat surface on the bottom of them indicates that they were fastened to the top of the rim.[116] The handle looped up 1.5 cm. over the top of the rim,[117] and the thumb-rest was attached to the loop at a 45° angle to the rim of the vessel.[118] Although the handle is considerably corroded, some incised lines are still visible in the palmette shape of the thumb rest (Pl. 99a).[119] The handle itself has a vine pattern,[120] and its base is the shape of an oak leaf. The escutcheon appears to have been undecorated, but has an outline similar to a pointed palmette.[121] The stance of the handle, the curve of the escutcheon, and the spread of the "arms" suggest a vessel with a height of ca. 14 cm. and a rim diameter of ca. 7.5 cm.[122]

Marked sherds (Pls. 37: 1-2 and 100b)

The marks on the sherd, Fig. 37.1, can be read as letters, cursive Hebrew or Greek, but, given the few signs preserved, no intelligible combination suggests itself.

The sherd from the shoulder of a large Roman storage jar, Fig. 37: 2, bears the Greek inscription ζωκ. The formation as it stands occurs in none of the lexica and onomastica consulted. However, if we phoneticize the *zeta* as σδ,[123] the inscription reads σδωκ, evidently an abbreviated form of Σαδωκ,[124] which is the most common LXX transliteration of the proper name *Ṣādôq*. It is uncertain whether the *omega* should be read as a vowel, or whether it represents the letter *waw*, in which case we have an abbreviated (ζ for σδ) transliteration of the Hebrew consonants *ṣdwq*. The name was preceded by another word, a trace of which is visible on the extreme left edge of the sherd.

Coin (Pls. 37: 9; 100b; 101a)

The coin is a type well-known from the Second Revolt.[125] The obverse side depicts a palm tree, its trunk flanked by the letters of Simon's name, *šmʿwn*. In the present example the *mem* and *nun* are clearly visible to the right of the trunk. A trace of the *ʿayn* can be seen to the left of the trunk, on the broken edge of the coin.[126] The letter to the right of the *mem* is badly broken but probably is the expected *šin*. Coins of this type were struck during all three years of the revolt.[127] The year of minting must be ascertained from the reverse side, which in the present case is corroded and broken.[128]

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[113] Cf. *JDS*, Fig. 35.

[114] *JDS*, pp. 63-83 and Pls. 18-23. Parallels are also cited from Pompeii and Herculaneum, pp. 43 f. and 65 ff. The writer has seen others in the Damascus Museum.

[115] Cf. *JDS*, Fig. 19:16.

[116] Cf. *JDS*, Fig. 19: 13, 15-18, 20.

[117] For this looped effect, see *JDS*, Fig. 17: 13 and 18: 15-18, 20-21.

[118] Cf. *JDS*, Figs. 17: 9, 18: 18-19.

[119] For this shape on the thumb-rest, see *JDS*, Fig. 19: 12, 13, 15, 16. For the palmette on the base of the escutcheon, see Fig. 20: 8, 12. The last of these is perhaps the closest in form to our thumb-rest.

[120] There is no exact parallel to this design; cf. however, *JDS*, Fig. 20: 18, 20.

[121] Cf. *JDS*, Figs. 19: 16 and 20: 8.

[122] This estimate is on the basis of a rough sketch by the writer following the analogy of Yadin's vessels. A close parallel would be Yadin's No. 18 (Pl. 22; Figs. 18, 27, *et passim*), the vessel of his group which has the handle closest to that of the Dâliyeh example in size and shape.

[123] For the pronunciation of the *zeta* in Hellenistic and later times, see e. g., Ἀζωτος = *ʾašdôd*, *loc. cit.*, in Hatch-Redpath, *Concordance*, Suppl., p. 8. Note also the Hebrew *zayn* = σδ in mss. variants of the occurrences of Ἔσδρας and Ἐσδραελ, *ibid.*, *ad loc.*

[124] This identification developed in a conversation with my colleague, Dr. Helen Goldstein.

[125] See G. F. Hill, *Catalogue of the Greek Coins of Palestine* (1914; rpt. Bologna, 1965), Pl. 37; *IEJ*, XI (1961), Pl. 102G; *IEJ*, XII (1962), Pl. 20 A, 30 A-D; Y. Meshorer, *Jewish Coins of the Second Temple Period*, trans. I. H. Levine (Tel Aviv, 1967), Pl. 28.

[126] The *ʿayn*, not represented on the drawing, is difficult to see on the enlarged photograph (Pl. 101a). It is visible on the smaller photograph (Pl. 100b), which was made with different lighting that enables one to distinguish between the letter and the coin edge. For this particular distribution of these letters, see *IEJ*, XI (1961), Pl. 10 G, and Meshorer, *op. cit.*, Pl. 28, #215.

[127] See Meshorer, *op. cit.*, pp. 159-69.

[128] The writer is indebted to Frank M. Cross, Jr. for reading his copy on the marked sherds and coin and confirming his suspicions of the unintelligibility of the first sherd.

GLASS VESSELS

Gladys Davidson Weinberg and Dan Barag

The fragments of glass vessels shown on Pls. 38 and 39 are important not for themselves but because many of them offer parallels to material found in the Judean Desert Caves which dates from the Second Revolt. In view of the fact that there are so few dated Palestinian groups, it seems worthwhile to present this material in some detail, even though it is very fragmentary. Owing to pressure of time, it has not been possible to give all the available references, but it is felt that even descriptions, accompanied by a few parallels, will be of value. Further research on the entire body of material from all the desert caves can thus be eventually undertaken.

One-handled jug (*Pl. 38: 1*) Preserved height 5.4 cm. Dia. rim 3.4 cm.

Rim, neck, handle, and upper part of body preserved. Dark green with slight olive tinge; bubbly, with many impurities. No weathering. Rim folded out and inward, slightly flattened by pressure against irregular surface. Wide ribbon handle of same material. Body wound with thread of same material, spiraling from base to a point about halfway up neck.

This piece does not seem to have a parallel in Judean Desert Cave material; it appears in slightly different form in western Europe; see e. g. F. Fremersdorf, *Das Naturfarbene sogenannte blaugrüne Glas in Köln* (Cologne, 1958), Pls. 26, 28, 29. It is attributed to ca. A.D. 100.

Bottle (*Pl. 38: 2*) Preserved height 6.3 cm. Dia. rim (uneven) ca. 5 cm.

Half of rim and upper part of body preserved. Light green with bluish tinge; many bubbles and impurities. Brownish weathering. Rim thickened and rounded off unevenly. Cylindrical neck flaring at upper and lower ends. Rather thick thread spirally wound, beginning probably at lower end; upper end not preserved.

No obvious parallel has been found for this piece, although it could be a development of the ordinary first-century flasks with a spiral thread, e. g. *JGS*, IX (1967), p. 41, Figs. 17, 18.

Flask (*?*) (*Pl. 38: 3*) Preserved height 0.5 cm. Dia. rim 5 cm.

About half of rim and small bit of neck preserved. Aquamarine, no weathering. Rim folded so as to leave a tube below the lip. Cf. for the technique of the rim *IEJ*, XII (1962), p. 178, Fig. 6, 4 from the Cave of the Pool.

Modiolus Pl.38: 4 Preserved height 5.8 cm.

Handle and part of body attached to it. Olive green, a few large bubbles, iridescence. Very broad and heavy handle, probably from just beneath the rim. Vertical body as far as preserved.

This is a common shape, but not particularly in this part of the world; it appears frequently in pottery as well. Cf. a glass example from a tomb group in the Amman Museum published by D. B. Harden, *Annales du 3è Congrès International d'Etude Historique du Verre*, Damascus, 1964, Journées Internationales du verre (Liege, n. d.), p. 52 and Fig. 11, second from left, bottom row. This is from Der Sanna and dated by the author to the first century A.D. The type corresponds to C. Ising's Form 37; see *Roman Glass from Dated Finds* (Groningen, 1957). She dates the type in the second half of the first century, for the most part, and offers western parallels. It is interesting to see that the form seems prevalent in Rumania and in southern Russia; see M. Bucovală, "Noi morminte de epocă romană timpurie la Tomis," *Pontice*, I (1968), pp. 273-275 and Fig. 3; N. P. Sorokina, *Glass from Excavations at Panticapaeum* (*Materialy i Issledovanija po Archeologii SSSR*, No. 103), Pl. 6, nos. 1-2). All these are dated either to the late first or early second century.

Unguentarium (*Pl. 38: 5*) Height estimate ca. 15 cm. Dia. rim ca. 3.5 cm. Dia. bottom 5.5 cm.

Fragment of rim and another including bottom and part of body, very likely from the same vessel. Aquamarine, no weathering. Very large bubbles and some impurities. Large pontil mark. Rim folded out, up and inward, cylindrical neck. Bottom concave. This shape is represented in many of the Judean Desert Caves. Cf. *JDS*, p. 104, no. 3.

Unguentarium (*Pl. 38: 6*) Preserved height 4.8 cm. Dia. bottom 2.2 cm. Rim missing. Aquamarine, no weathering. Long, large bubbles, some impurities. Very thick base, large pontil mark. The walls are nearly 2 mm. thick at the preserved top. Slight (tooled) constriction at the base of the neck. Cf. *JDS*, p. 104, no. 6.

Shallow bowl or bottle (*?*) (*Pl. 38: 7*) Preserved height 2.2 cm. Estimated dia. of preserved portion ca. 12 cm. or more.

Two joining fragments, one including the central portion of the base. Dark aquamarine, covered with clinging brown earth but no weathering. Small bubbles. Bottom is concave, with a circular pontil mark. Starting at the base are eleven or twelve (calculated on the basis of diameter) narrow, short, pinched-out vertical ribs, ca. 2 cm. distant from each other. The length of the only one completely preserved is 2.3 cm.

Bowl or cup (*?*) (*Pl. 39: 1*) Preserved height 2 cm. Dia. base 3.9 cm. Base and lower part of body preserved. Pale aquamarine, slight iridescence. A few small bubbles. Cut-out ring base forming a concave bottom which has an irregular surface but no pontil mark. The body spreads widely from the base, but not enough is preserved to give the entire shape. Cf. for the general technique *IEJ*, XII (1962), p. 210, and Fig. 1 on p. 209.

Bowl or cup (*Pl. 39: 2*) Preserved height 1.7 cm. Dia. base 4.4 cm.

Most of base and small part of body preserved. Similar to preceding but lighter aquamarine and thinner fabric. No pontil mark. Slight iridescence (white).

Plate (*?*) (*39: 3*) Preserved height ca. 0.5 cm. Estimated dia. rim ca. 30 cm. Three fragments of rim (two joining).

Very good light aquamarine fabric, with heavy brown earth incrustation but no weathering. The plate would have been exceptionally large and the molding which finishes off the edge is delicate and finely made. The edge is rounded off.

Bowl (*Pl. 39: 4*) Preserved height ca. 2 cm. Estimated dia. rim ca. 30 cm.

Fragment of rim with portion of corrugated band attached. Pale green, good fabric, but many bubbles in the attached band. No weathering. The rim is folded outward and down. The corrugated band was made by attaching a large coil and then tooling vertical depressions into the surface. Similar handles were found in several Judean Desert caves; see *JDS*, p. 104, no. 7; *IEJ*, XII (1962), p. 209, no. 4 and p. 178, Fig. 6. Isings, *Roman Glass*, p. 59, cites some from the west (Form 43), dating them to the first or second century, and the band on the rim also appears in Rumania, South Russia, etc.

Bowl (*Pl. 39: 5*) Preserved height 2 cm. Dia. rim ca. 14 cm.

Small fragment of rim and body. Pale aquamarine, small bubbles, no weathering. Thickened, rounded rim, splaying outward. Cf. *IEJ*, XII (1962), p. 209, Fig. 3, etc.

Deep bowl (*Pl. 39: 6*) Preserved height 4 cm. Dia. rim ca. 15 cm.

Two joining fragments forming rim and part of body. Pale aquamarine, a few tiny bubbles and some impurities. No weathering. Similar to preceding. Outsplayed rim, sides curving in at lowest preserved point.

Bowl or cup (*Pl. 39: 7*) Preserved height 2.4 cm. Dia. rim 8 cm.

Fragment of rim and body. Pale aquamarine, some impurities, no weathering. Similar to preceding but much smaller and deeper.

Bottle (*?*) (*Pl. 39: 8*) Preserved height 2.4 cm. Dia. rim 8 cm.

Fragment of rim and body. Pale green, surface dull and pitted, with some iridescence. A few tiny bubbles. Thickened, rounded rim. Constricted neck, body flaring slightly outward. This fabric is unlike any of the others, and the origin of this piece is obscure.

Bowl or plate (?) (*Pl. 39: 9*) Preserved height ca. 0.5 cm. Dia, rim 12 cm.

Fragment of rim and body. Aquamarine with greenish tinge. Some small bubbles and impurities. No weathering. Outsplayed rim made of cut-out tubular roll pushed toward the body to form a double tube. For the technique of the rim cf. *IEJ*, XII (1962), p. 209, Fig. 5.

Bowl (*Pl. 39: 10*) Preserved height 0.8 cm. Dia. rim 10 cm.

Fragment of rim and body. Pale aquamarine; very tiny bubbles, some impurities. No weathering. Outsplayed rim with double tube created by cutting out and folding at juncture with rather vertical body. Rim slightly thickened and rounded. For technique of rim cf. *IEJ*, XII, p. 209, Fig. 1.

Bottle (?) (*Pl. 39: 11*) Preserved height 2.1 cm.

Small neck fragment (no edge preserved) of bottle like Pl. 38: 1. Olive green, with some bubbles, no weathering. Rather thick thread wound spirally around the neck.

Bowl (?) (*Pl. 39: 12*) Preserved height 1.3 cm. Dia. base 5.4 cm.

Half of base and part of body preserved. Aquamarine, weathered (white) and iridescent. Hollow, cut-out ring base, with body spreading widely above.

BEADS

Ben B. Cox

Most of the beads from the ʿArâq en-Naʿsâneh, Room 4, cache (Pls. 40 and 101b) were made from forms of silica (SiO_2). Some are quartzite (metamorphosed sandstone); some are cryptocrystalline silica (chalcedony); others are crystalline vein quartz; a few are amorphous silica (opals). The other beads were made from limestone or marble ($CaCO_3$). hematite (Fe_2O_3), magnetite (Fe_3O_4), or a microcrystalline igneous rock composed of quartz, feldspar, and ferromagnesian minerals, possibly microcrystalline quartz diorite. The beads made from the igneous rock were cut to resemble corundum crystals which in gem quality would be rubies or sapphires depending on color. More exact identification of the igneous specimens would require destruction of a bead. Carnelian, sard, bloodstone and agate are among the best known varieties of chalcedony. Some of the carnelians are good gem quality and look like rubies but are softer. The carnelians were probably from an agate because some of the agate beads include pieces of carnelians.

Thanks are due Mr. Ralph B. Ross and Dr. Elton Couch of Gulf Research and Development Company for the x-ray examination of several of the specimens.

MINERAL COMPOSITION OF BEADS

1. Quartzite
2. Carnelian or agate
3. Carnelian or agate
4. Carnelian or agate
5. Chalcedony
6. Agate
7. Semi-opal (amorphous SiO_2)
8. Quartzite
9. Rose quartz
10. Quartzite
11. Marl ($CaCO_3$ + hydrous Al silicates)
12. Carnelian or agate
13. Quartzite
14. Carnelian or agate
15. Quartzite
16. Carnelian or agate
17. Possibly microcrystalline quartz diorite
18. Pink quartzite
19. Agate (carnelian)
20. Chalcedony
21. Quartzite
22. Marble ($CaCO_3$)
23. Agate (carnelian)
24. Pink quartzite
25. Quartzite
26. Carnelian or agate
27. Possibly microcrysalline quartz diorite
28. Quartzite
29. Carnelian or agate
30. Marble
31. Quartzite
32. Opaline chalcedony
33. Bone (possibly from a fish and shaped as a fish)
34. Marl with calcite band (impure chalk, $CaCO_3$)

35. Rose quartz
36. Quartzite
37. Bloodstone, chalcedony with red jasper spots
38. Agate
39. Rose quartzite
40. Possibly microcrystalline quartz diorite
41. Chalcedony
42. Quartzite
43. Rock crystal (SiO_2)
44. Chalk with ferruginous bands
45. Chalcedony
46. Marble
47. Chalcedony (sard)
48. Chalk with ferruginous bands
49. Hematite
50. Quartzite
51. Carnelian or agate
52. Possibly microcrystalline quartz diorite
53. Fe_2O_3, hematite (or possibly martite)
54. Carnelian or agate
55. Chalcedony cf. bloodstone lacking red jasper spots
56. Pink quartzite
57. Pink quartzite
58. Pink quartzite
59. Chalcedony
60. Opaline chalcedony
61. Quartzite
62. Marble
63. Marble
64. Agate or carnelian
65. Pinkish quartzite
66. Possibly microcrystalline quartz diorite
67. Carnelian
68. Pink quartzite
69. Banded chalk
70. Carnelian or agate
71. Pink quartzite
72. Magnetite
73. Carnelian
74. Quartzite
75. Possibly microcrystalline quartz diorite
76. Carnelian or agate
77. Pink quartzite
78. Agate (amorphous silica)
79. Quartzite
80. Quartzite
81. Marble
82. Pink quartzite
83. Pink quartzite
84. Pink quartzite
85. Opal
86. Agate or carnelian
87. Copper encrusted with malachite
88. Carnelian or agate
89. Carnelian or agate
90. Carnelian or agate

PLATES

Description of pottery in Pls. 1-13 is by W. Dever, using Munsell Color Charts and the system of description currently followed by the Gezer excavation.

Plate 1

Number	*Description*	*Photograph*
1:1	Medium tan ware (" Reddish Yellow " 7.5YR 6/6-6/8); well fired; many small, few medium limestone inclusions; base carelessly made but rim wheel-finished; complete except for rim chips.	Pl. 64
1:2	Medium—medium-fine dark tan ware (" Red " 2.5YR 4/8); surface slipped (" Light Yellowish Brown " 10YR 6/4); very well fired, dark grey core; many small, few medium limestone inclusions; well made; raised thumb-impressed band; lower part only, reconstructed.	
1:3	Medium reddish orange ware (" Red " 2.5YR 5/8; surface buff (" Light Yellowish Brown " 10YR 6/4, mottled to " Reddish Yellow " 75YR 6/6); well fired, grey core; many small, few medium limestone inclusions; quite well made; decorated with 6-point comb; complete except for neck.	
1:4	Medium-coarse light brown ware (" Very Pale Brown " 10YR 7/3); medium fired; some small—few medium and large—limestone inclusions; well made; raised finger-formed rope moulding at mid-body—moulding well formed; thumb-impressed band at base of neck; neck wheel-made, fairly sharply cut; reconstruction nearly complete.	Pl. 64
1:5	Coarse dark reddish-brown ware (" Red " 10R 5/8); exterior surface blackened by soot; medium fired, irregular greyish-brown core; many small and medium, few large calcium inclusions; exceptionally well made; rope moulding separately applied, probably stick indented; reconstruction fairly complete.	Pl. 64
1:6	Medium-fine orange buff ware (" Light Red " 2.5YR 6/8); buff surface (" Yellowish Brown 10YR 5/8, mottled to " Reddish Yellow " 7.5YR 6/6); medium fired, light greyish-brown core; many small limestone and some small-medium fire-altered limestone inclusions; well made; body reconstructed.	Pl. 65
1:1	As 1:5; complete, base cracked.	Pl. 64

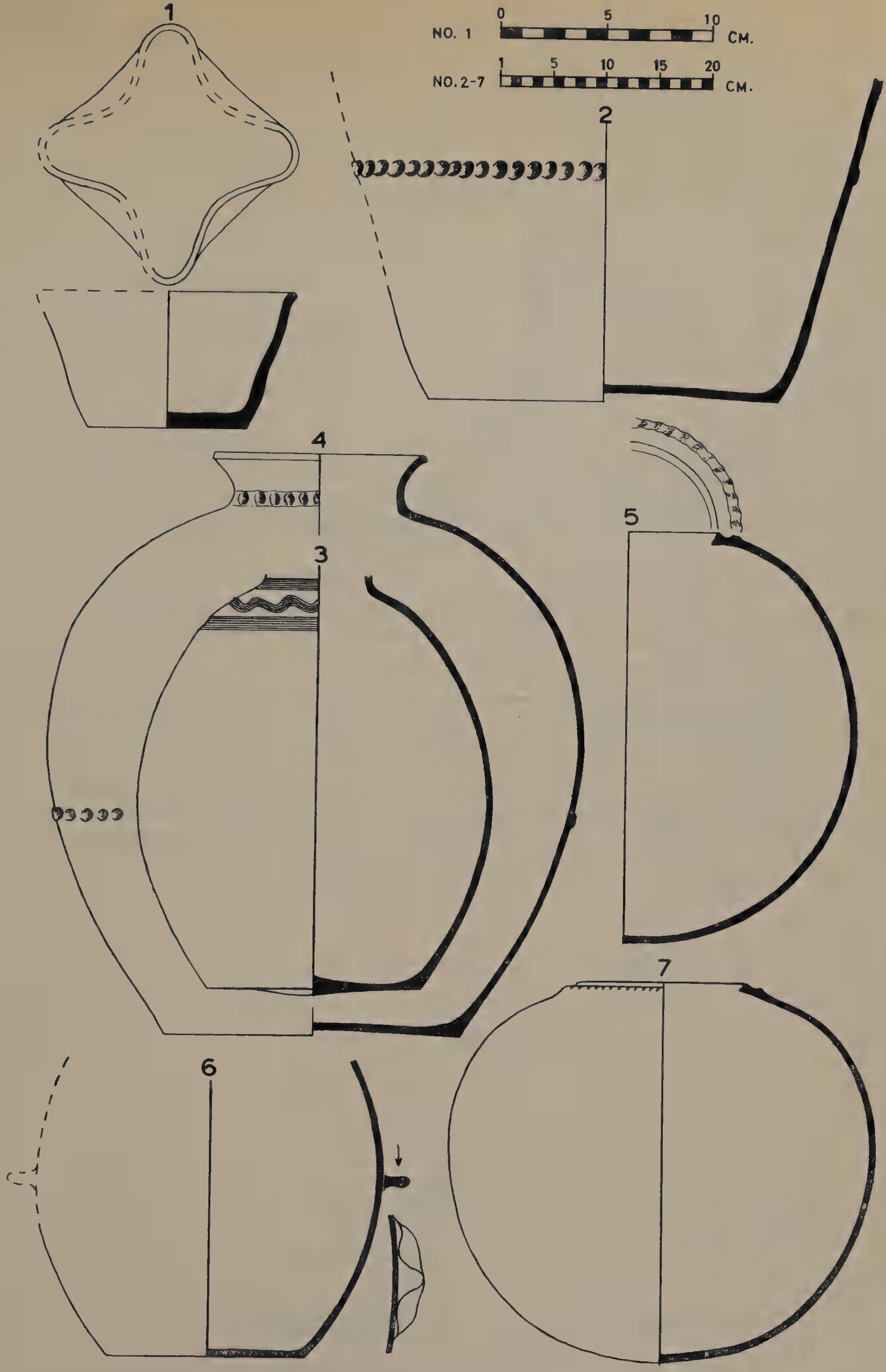


PLATE 1. MB I Pottery from Cave II.

PLATE 2

Number	*Description*	*Photograph*
2:8	Medium tan ware (" Light Brown " 7.5YR 6/4); medium fired; many small white limestone, some small-medium red limestone inclusions; raised thumb-impressed band; 3 cm. " kill " hole above band; " folded-envelope " handles; nearly complete body.	Pl. 65
2:9	As 1:5; reconstruction complete.	Pl. 66
2:10	Medium grey ware (" Greyish Brown " 10YR 5/2); medium fired; many small—few medium limestone inclusions; well made; raised thumb-impressed band lower body only.	
2:11	Medium-fine light grey ware " Light Yellowish Brown " 10YR 6/4); quitewell fired; many small, few medium and large limestone inclusions; well made; three bands of combing on shoulder and stippled band at base of neck, made with 5-point comb; 7 cm. " kill " hole at mid-body; complete except for broken rim.	
2:12	Medium-fine tannish-orange (" Light Red " 2.5YR 6/8); medium fired; some small limestone, few small fire-altered limestone inclusions; quite well fired; 2 combed bands on shoulder, made with 7-point comb; entire neck wheel-finished, rim sharply cut; complete except for rim chips.	Pl. 66

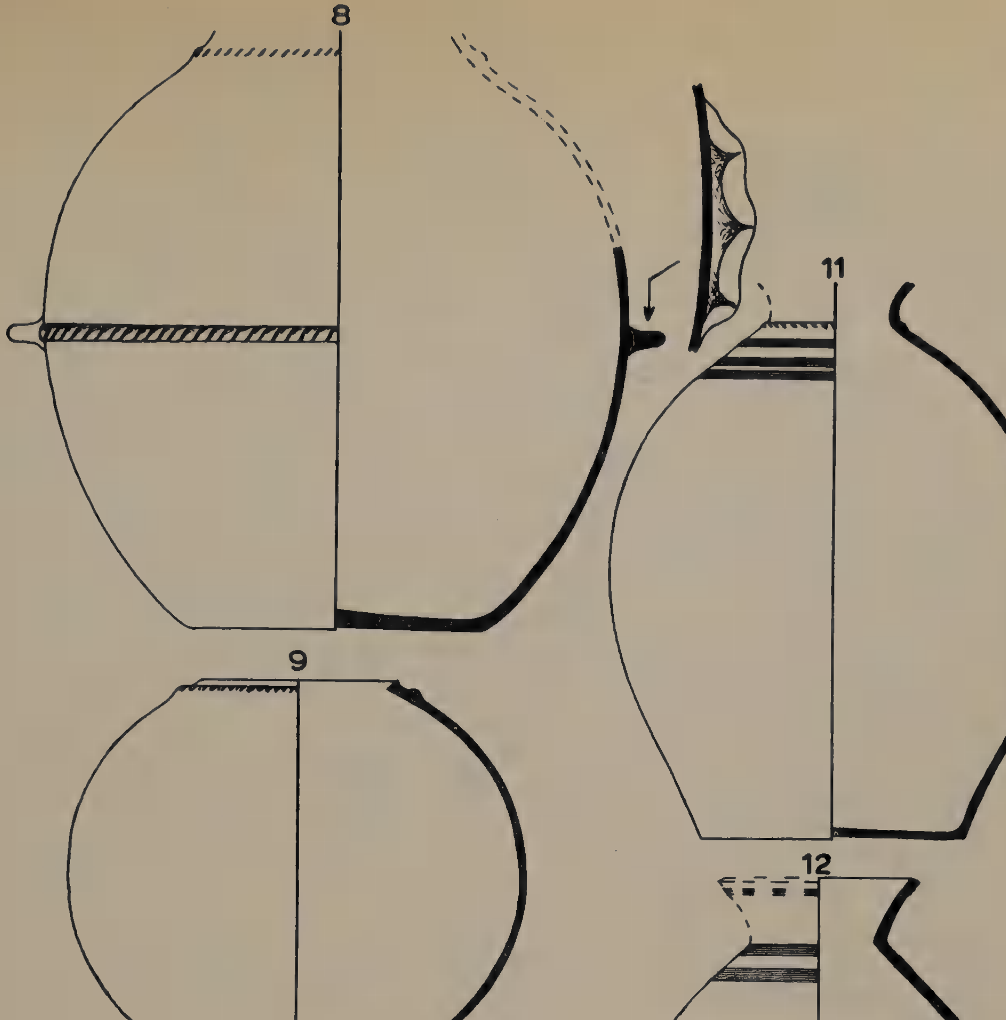


PLATE 2. MB I Pottery from Cave II.

PLATE 3

Number	*Description*	*Photograph*
3:13	Medium—medium-fine dark buff ware ("Very Pale Brown" 10YR 7/3); well fired, grey core; many small, few medium limestone inclusions; quite well made; raised thumb-impressed bands; portion of body missing in reconstruction, ledge-handles partially broken.	
3:14	Medium buff to drab ware ("Red" 2.5YR 5/8); surface tan ("Yellowish Red" 5YR 5/8); well fired; many small, few medium limestone inclusions; body lumpy at lower half, but neck and rim well wheel-made, knife-cut; 3 combed bands lightly incised with 8-point comb joined by single vertical comb stroke; small hole on shoulder at lowest combed band; complete except for rim chip.	Pl. 66
3:15	Medium-coarse tan ware ("Light Brown" 7.5YR 6/4); medium fired, grey core; many small limestone, some brown ceramic (grog) inclusions; fairly well made; vertically smoothed with 5- or 6-point comb, *ca.* 2 cm. wide; bands water-smoothed, thumb-impressed; bottom only, reconstructed.	
3:16	As Fig. 1:5; complete except base missing.	Pl. 66
3:17	Medium dark greenish-buff ware ("Black" 5YR 2/1); medium fired; many very small ceramic (grog), few small-medium limestone inclusions; moderately well made; spout lightly pinched; somewhat misshapen in firing; complete except base missing.	

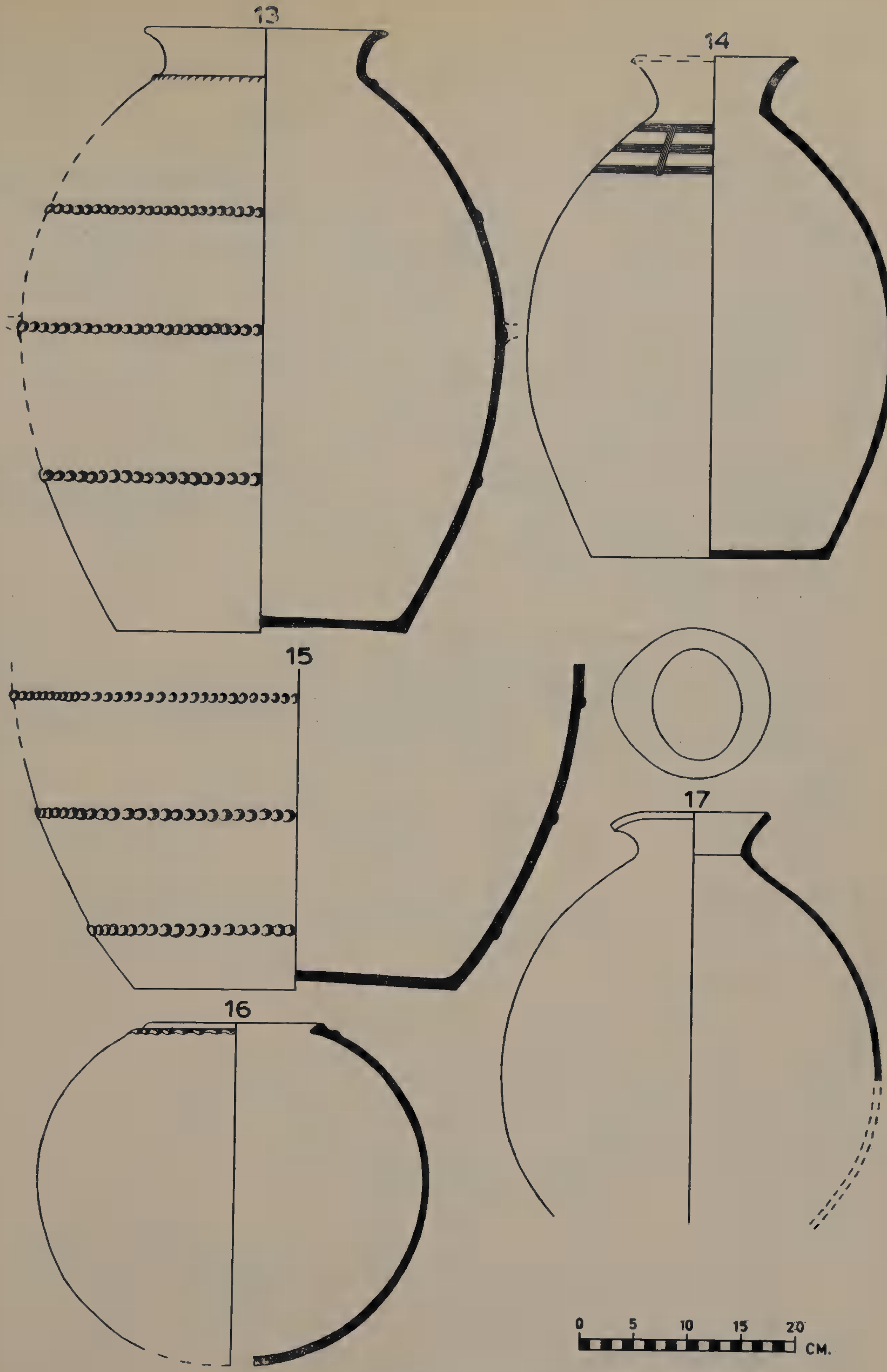


Plate 3. MB I Pottery from Cave II.

Plate 4

Number	Description	Photograph
4:18	Orange ware with orange buff surfaces and slight grey core; many fine, few larger white inclusions; raised finger-formed band of rope moulding; lower part of body reconstructed (not redescribed).	
4:19	As Fig. 1:5.	Pl. 67
4:20	As Fig. 1:5; reconstruction partly complete.	
4:21	Medium brownish-buff ware (" Reddish Brown " 5YR 5/3); medium-well fired; grey core; many small limestone inclusions; well made; body vertically hand-smoothed, bands added and water-smoothed on either side, thumb-impressed rather carefully; many medium-large grits exploded from surface.	Pl. 67

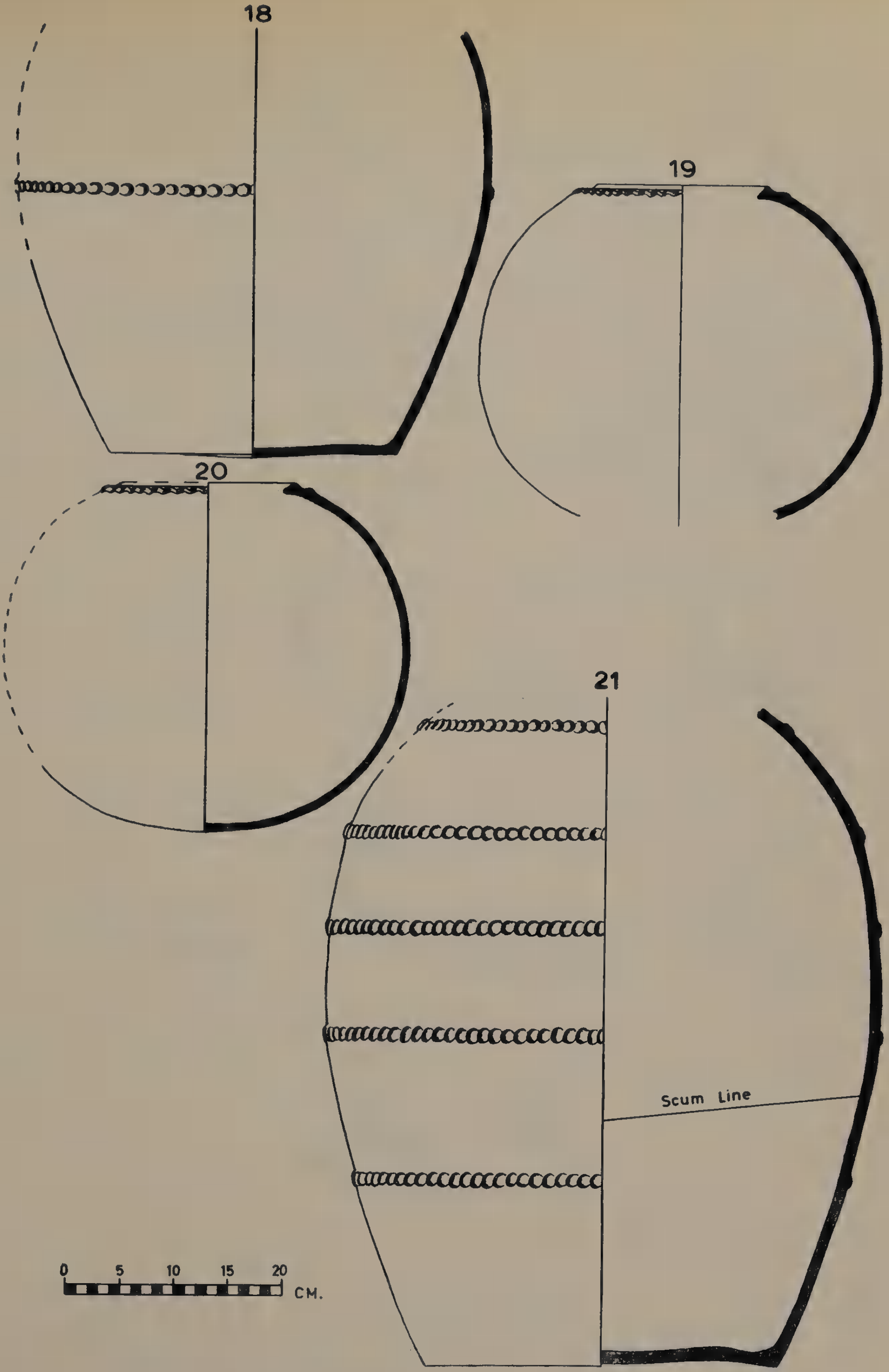


Plate 4. MB I Pottery from Cave II.

Plate 5

Number	*Description*	*Photograph*
5:1	Coarse orange-buff ware (" Light Red " 2.5YR 6/8); well fired light greyish-brown core; few small-medium quartz, some small limestone, few small-medium fire-altered limestone inclusions; medium made; neck wheel-made.	Pl. 67
5:2	Medium-coarse dark grey ware (" Very Dark Grey " 10YR 3/1); well fired; some small, few medium limestone, few small-medium ceramic (grog) inclusions; medium well made; neck wheel-made.	Pl. 67
5:3	Medium-coarse grey-brown ware (" Light Brown " 7.5YR 6/4); medium fired; few small-medium quartz, few small limestone inclusions; medium well made; neck wheel-made.	Pl. 67
5:4	Medium-coarse orange ware (" Light Red " 2.5YR 6/8); poorly fired, very light brownish-grey core; some small-medium limestone and fire-altered limestone inclusions; medium well made; combed with 8-point comb; neck wheel-made.	Pl. 67
5:5	Medium-coarse cream-tan ware (" Light Brown " 7.5YR 6/4); medium fired; some small-medium limestone, few small-medium wadi gravel inclusions; medium well made; combed with 8-point comb; neck wheel-made.	Pl. 67
5:6	Medium reddish-brown ware (" Light Brown " 7:5YR 6/4); well fired, very light grey core; many small, few medium limestone inclusions; fairly well made; combed with 4-point comb; neck wheel-made.	Pl. 67
5:7	Coarse brownish-tan ware (" Light Brown " 7.5YR 6/4); well fired; many small to few large limestone inclusions; medium well made; two lightly impressed combed bands made with 12-point comb; hole 4 mm. in diameter 7 mm. below lip; neck wheel-made.	Pl. 67
5:8	Medium-coarse orange-tan ware (" Light Red " 2.5YR 6/8); poorly fired, grey core; few small-medium limestone and fire-altered limestone inclusions; medium well made; combed with 5-point comb; neck wheel-made.	Pl. 67
5:9	Coarse orange-tan ware (" Pink " 7.5YR 7/4); well fired; many small, few medium limestone inclusion; medium well made; combed with gently-pressed 8-point comb; neck wheel-made.	Pl. 67
5:10	Medium-coarse tannish-orange ware (" Red " 2.5YR 5/6); medium fired, grey core; fairly well made; combed with 8-point comb; neck wheel-made.	Pl. 67

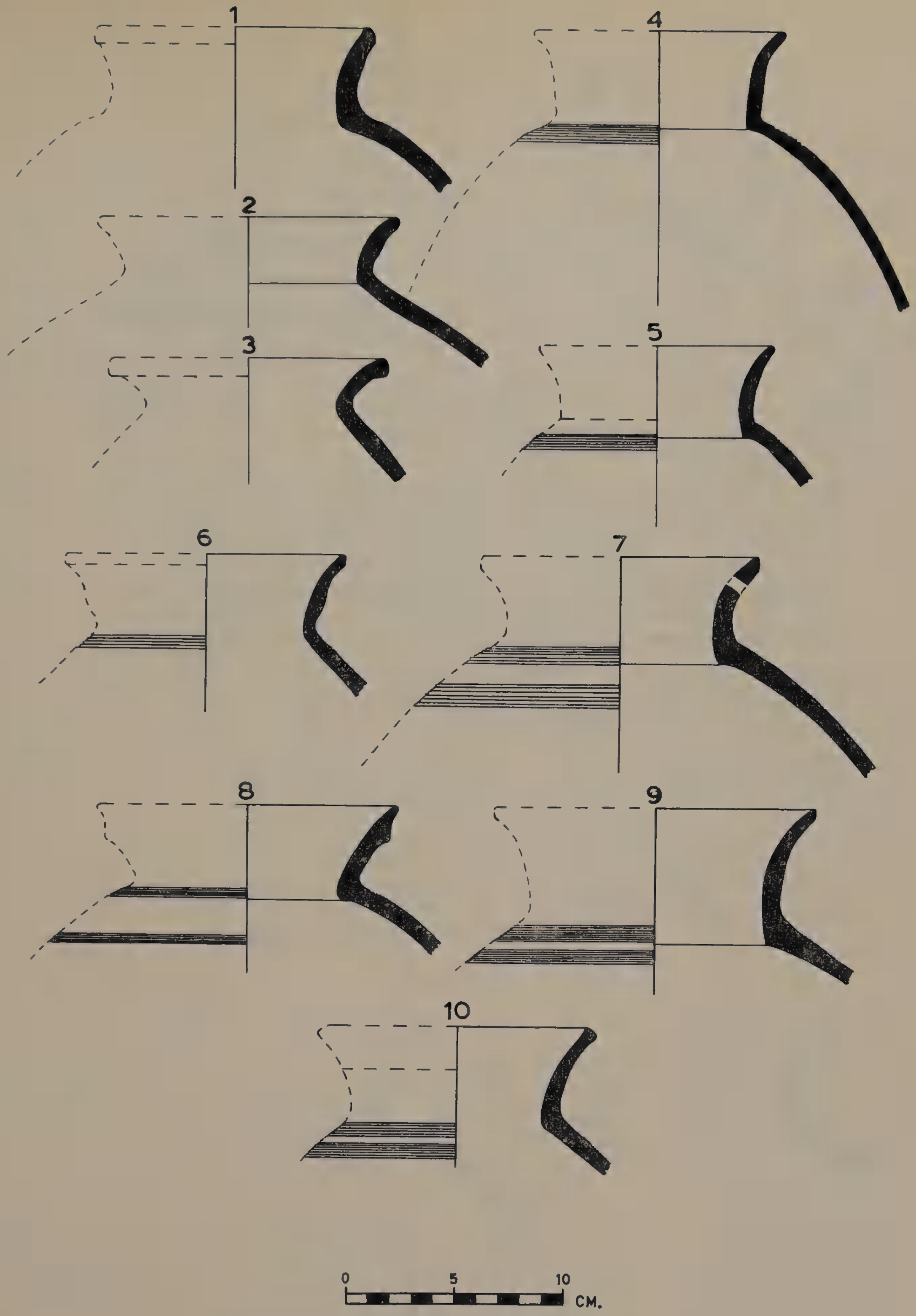


Plate 5. MB I Pottery from Cave II, Room 2.

PLATE 6

Number	*Description*	*Photograph*
6:1	Medium-coarse tan ware (" Red " 2.5YR 5/6); poorly fired, grey core; some small, few medium limestone inclusions; fairly well made; pattern combed with 9-point comb; neck wheel-made vestigial lug-handle.	Pl. 68
6:2	Medium-coarse buff ware (" Light Brown "—7.5YR 6/4—" Light Red " 2.5YR 6/6); medium fired—no core; some small-medium limestone and fire-altered limestone inclusions; medium well made; combing made with 4-point comb, stippled band with 6-point comb; neck wheel-made.	Pl. 68
6:3	Coarse tan ware (" Red " 2.5YR 5/6); poorly fired—irregular grey core; many small, few medium limestone inclusions; medium well made; combing made with 4-point comb, stippled band with 4-point comb; neck wheel-made.	Pl. 68
6:4	Medium brownish-buff ware (" Light Red " 2.5YR 6/6); medium fired, light grey core; some small-medium wadi gravel inclusions; medium well made; band of singe-point punctures; lightly combed; neck wheel-made.	Pl. 68
6:5	Medium-coarse buff ware (" Reddish Yellow " 5YR 6/6); medium fired core; few small-medium limestone, fire-altered limestone and red limestone inclusions; poorly made; band of oblique slashes and comb-stippling; neck wheel-made.	Pl. 68

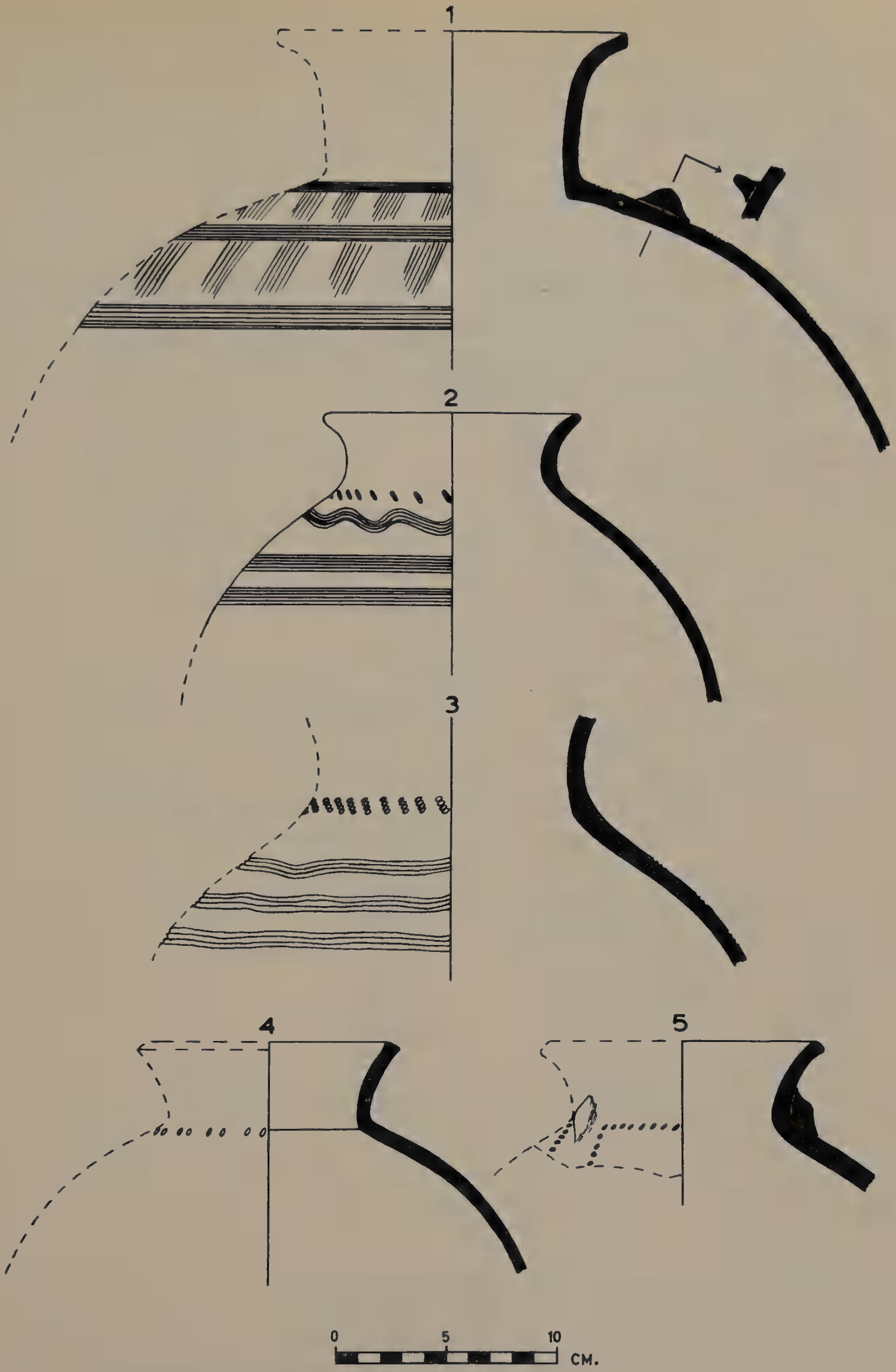


Plate 6. MB I Pottery from Cave II, Room 2.

PLATE 7

Number	*Description*	*Photograph*
7:1	Medium light brown to buff ware (" Light Brown " 7.5YR 6/4); well fired; some small limestone, few small-medium red limestone and few small-medium fire-altered limestone inclusions; poorly made; irregular vertical combing of body, two rows of oblique incisions on shoulder; neck wheel-made.	Pl. 68
7:2	Coarse brown ware (" Light Brown " 7.5YR 6/4); medium-fired; some medium-large calcite inclusions; few medium fire-altered limestone inclusions; medium made, band of oblique slashes; neck wheel-made.	Pl. 68
7:3	Medium-coarse buff ware (" Pale Brown " 10YR 6/3); well fired; many small limestone inclusions; medium-well made; oblique slashes below neck; body lightly combed; neck wheel-made.	Pl. 68
7:4	Medium pink ware (" Red " 10R 5/6); surface (" Light Brown " 7.5YR 6/4); well fired; many small limestone inclusions; medium well made; two bands of oblique slashes around shoulder; neck wheel-made.	Pl. 68
7:5	Medium-coarse dark grey ware (" Light Brown " 7.5YR 6/4); well fired, dark grey core; some small, few medium and large limestone inclusions; medium-well made; raised thumb-impressed band below neck; neck wheel-made.	Pl. 68
7:6	Coarse light greenish buff ware (" Light Yellowish Brown " 10YR 6/4); medium fired; some small-medium limestone inclusions; few small-medium fire-altered limestone and red (Central Hill Country) limestone inclusions; medium-well made; raised thumb-impressed band below neck; neck and rim wheel-made.	Pl. 68
7:7	Coarse brown ware (" Light Red " 2.5YR 6/8—" Light Brown " 7.5YR 6/4); poorly fired; few small-medium limestone inclusions; poorly made; raised thumb-impressed band below neck; neck and rim wheel-made.	Pl. 68

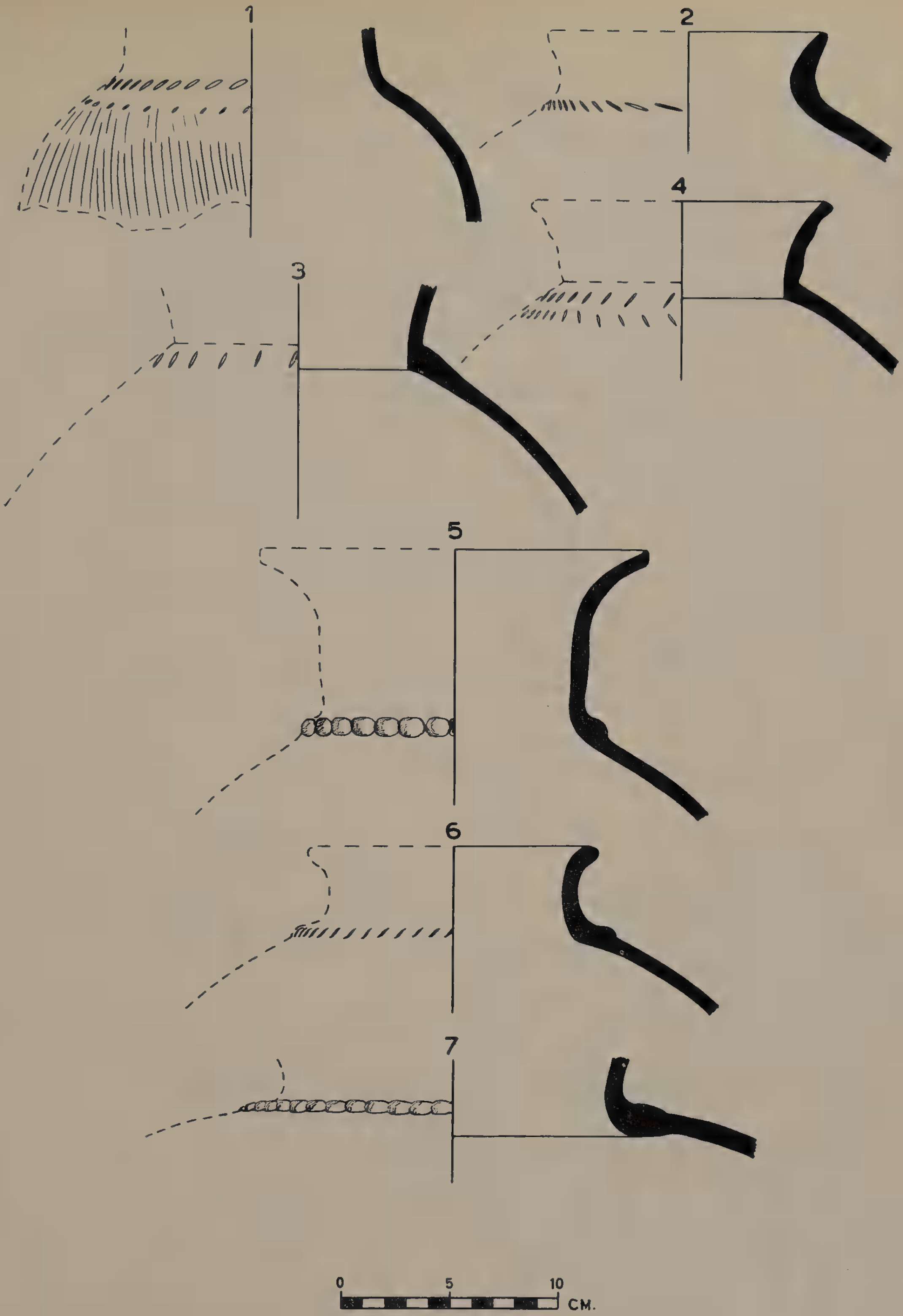


PLATE 7. MB I Pottery from Cave II, Room 2.

PLATE 8

Number	*Description*	*Photograph*
8:1	Medium-coarse orange to tan ware ("Red" 2.5YR 5/6); medium fired-no core; many small limestone inclusions; medium made; traces of 4-point combed pattern below neck; neck and rim wheel-made.	Pl. 69
8:2	Medium brownish-red ware ("Red" 2.5YR 5/6); medium fired, irregular light grey core; many small limestone inclusions; well made; combed with 6-point comb; whole body lightly combed; neck and rim wheel-made.	Pl. 69
8:3	Medium-coarse pink ware ("Light Red" 2.5YR 6/6); tan outer surface ("Very Pale Brown" 10YR 7/3); well fired, grey core; many small limestone inclusions; medium well made; combing made with 6-point comb; rim thumb-scalloped; neck and rim wheel-made.	Pl. 69
8:4	Medium tan to orange-brown ware ("Light Red" 2.5YR 6/6); medium fired, light grey core; few small-medium limestone and fire-altered limestone inclusions; medium well made; combing made with 5-point comb on shoulder, stippled band made with 4-point comb; neck and rim wheel-made.	Pl. 69
8:5	Medium brown ware ("Pinkish Grey" 5YR 6/2); well fired; many fine limestone inclusions; well made; 9-point stippled band below neck, bands of combing made with 4-point comb; neck wheel-made.	Pl. 69
8:6	Fine tannish-orange ware ("Reddish Yellow" 5YR 6/6); well fired, grey core; few small limestone and fire-altered limestone, few small organic (carbon) inclusions; medium well made, neck wheel-made.	
8:7	Medium-fine orange ware ("Light Red" 2.5YR 6/8); well fired, grey core; some small-medium calcite inclusions; poorly made; inclusions exploded through surface; neck and rim wheel-made.	Pl. 69
8:8	Medium-fine light brown ware ("Reddish Brown" 2.5YR 5/4); well fired; many small limestone inclusions; medium well made; neck wheel-made.	
8:9	Fine reddish pink ware ("Red" 2.5YR 5/6); well fired; some small, few medium limestone inclusions; well made; neck and rim wheel-made.	
8:10	Medium fine reddish-pink ware ("Red" 2.5YR 5/6); medium fired, light grey core; many small, few medium limestone inclusions; medium well made; faint combing below neck.	
8:11	Medium tannish-orange ware ("Light Red" 10R 6/8); surface tan ("Light Brown" 7.5YR 6/4); medium fired; many small limestone inclusions; medium well made; slight evidence of horizontal combed band high on shoulder, mostly obliviated by handle attachment, made with 6-point comb; neck wheel-made.	Pl. 69
8:12	Medium buff ware ("Pinkish Grey" 5YR 6/2); well fired; some small limestone inclusions; medium made; stippled and combed band made with 8-point comb on shoulder; neck wheel-made.	Pl. 69

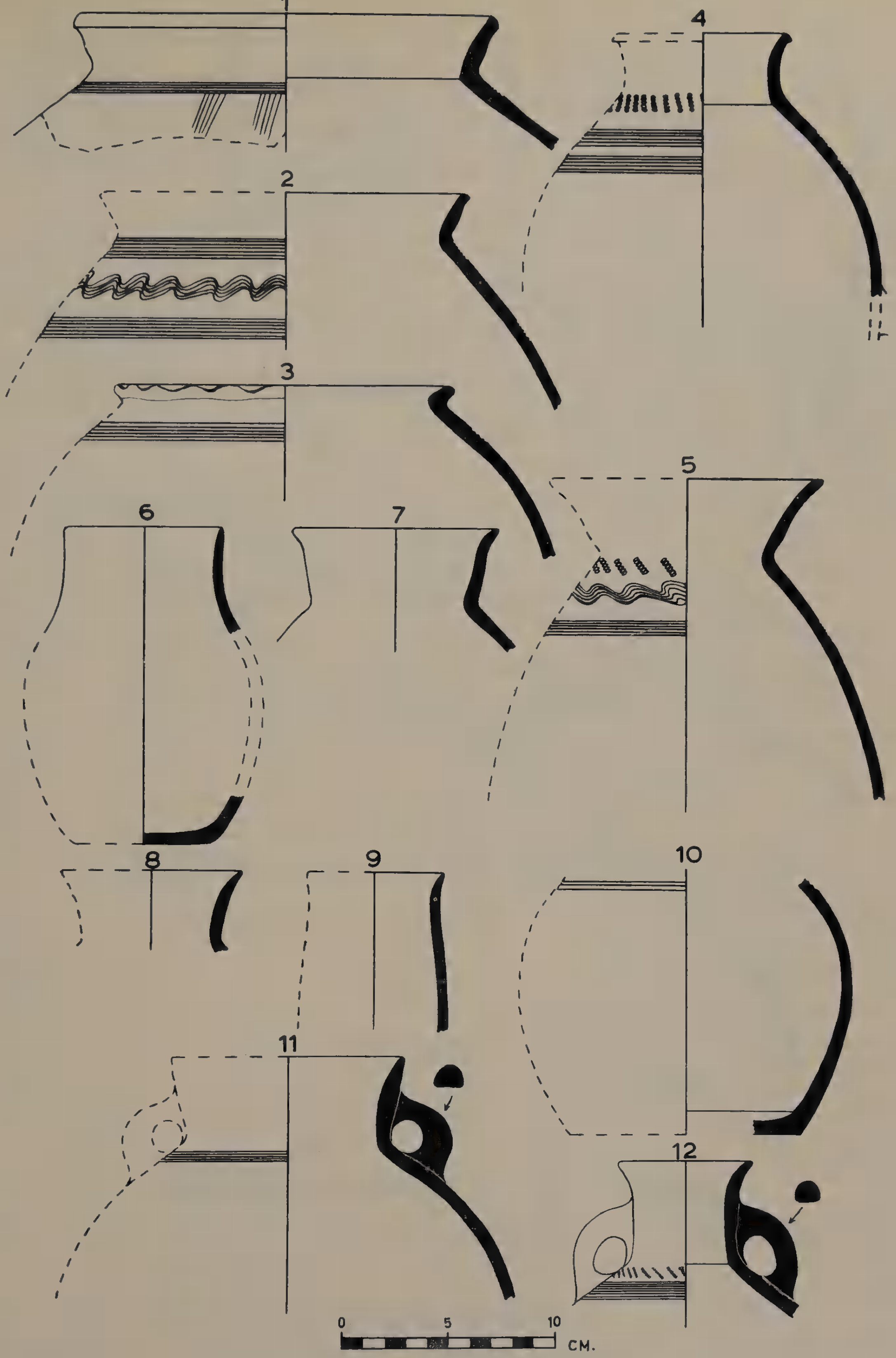


PLATE 8. MB I Pottery from Cave II, Room 2.

PLATE 9

Number	*Description*	*Photograph*
9:1	Fine tan to orange ware ("Pink" 7.5YR 7/4); well fired; few small wadi gravel inclusions; medium-well made; lightly combed bands with 6-(?) point comb; upper body wheel-made.	Pl. 69
9:2	Medium-fine brownish-orange ware ("Yellowish Red" 5YR 4/8); medium fired—no core; some small-medium fire-altered limestone, few small limestone, and few small-medium calcite inclusions; medium well made; combing made with 4-point comb; upper body wheel-made.	Pl. 69
9:3	Fine tan ware ("Light Red" 2.5YR 6/8); well fired; some small-medium wadi gravel inclusions; medium well made; 5-point wavy band of combing below neck, 7-tooth, straight band of combing on body; upper body wheel-made.	Pl. 69
9:4	Medium brown ware ("Brown" 7.5YR 5/4); some small-medium wadi gravel inclusions; medium well made; combing with 4-point comb; entire body slightly combed; upper body wheel-made.	Pl. 69
9:5	Medium-fine tan ware ("Reddish Yellow" 5YR 6/6); well fired; some small-medium limestone and fire-altered limestone, and few medium calcite inclusions; medium well made; 8-point straight band of combing; upper body wheel-made.	Pl. 69
9.6	Medium-fine brown ware ("Light Brown" 7.5YR 6/6); well fired; some small-medium wadi gravel inclusions; medium well made; combed with 8-point comb; neck wheel-made; vestigial lug-handle or spout.	Pl. 69
9:7	As Pl. 1:5.	Pl. 70
9:8	Medium-coarse tannish brown ware ("Light Red" 2.5YR 6/6); medium fired, light grey core; some small-medium calcite, some small-medium fire-altered limestone inclusions; medium well made.	Pl. 70
9:9	As Pl. 1:5.	Pl. 70
9:10	As Pl. 1:5.	Pl. 70
9:11	As Pl. 1:5.	Pl. 70
9:12	As Pl. 1:5.	Pl. 70
9:13	As Pl. 1:5.	Pl. 70
9:14	As Pl. 1:5.	Pl. 70
9:15	As Pl. 1:5.	Pl. 70

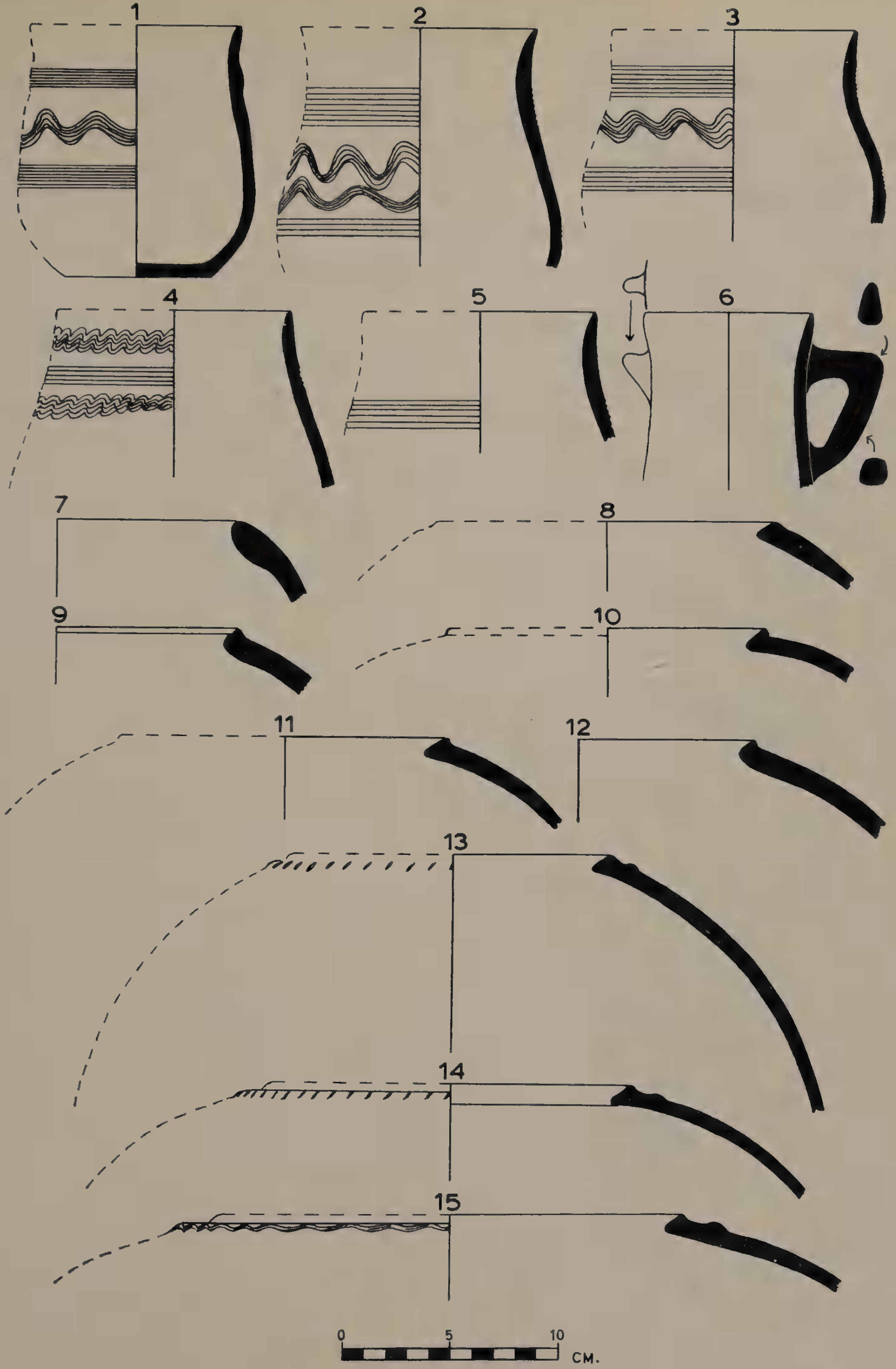


Plate 9. MB I Pottery from Cave II, Room 2.

Plate 10

Number	*Description*	*Photograph*
10:1	As Pl. 1:5.	Pl. 70
10:2	As Pl. 1:5.	Pl. 70
10:3	As Pl. 1:5.	Pl. 70
10:4	As Pl. 1:5.	Pl. 70
10:5	As Pl. 1:5.	Pl. 70
10:6	As Pl. 1:5.	Pl. 70
10:7	As Pl. 1:5.	Pl. 70
10:8	As Pl. 1:5.	Pl. 70
10:9	As Pl. 1:5.	Pl. 70
10:10	As Pl. 1:5.	Pl. 70
10:11	As Pl. 1:5.	Pl. 70
10:12	As Pl. 1:5.	Pl. 70

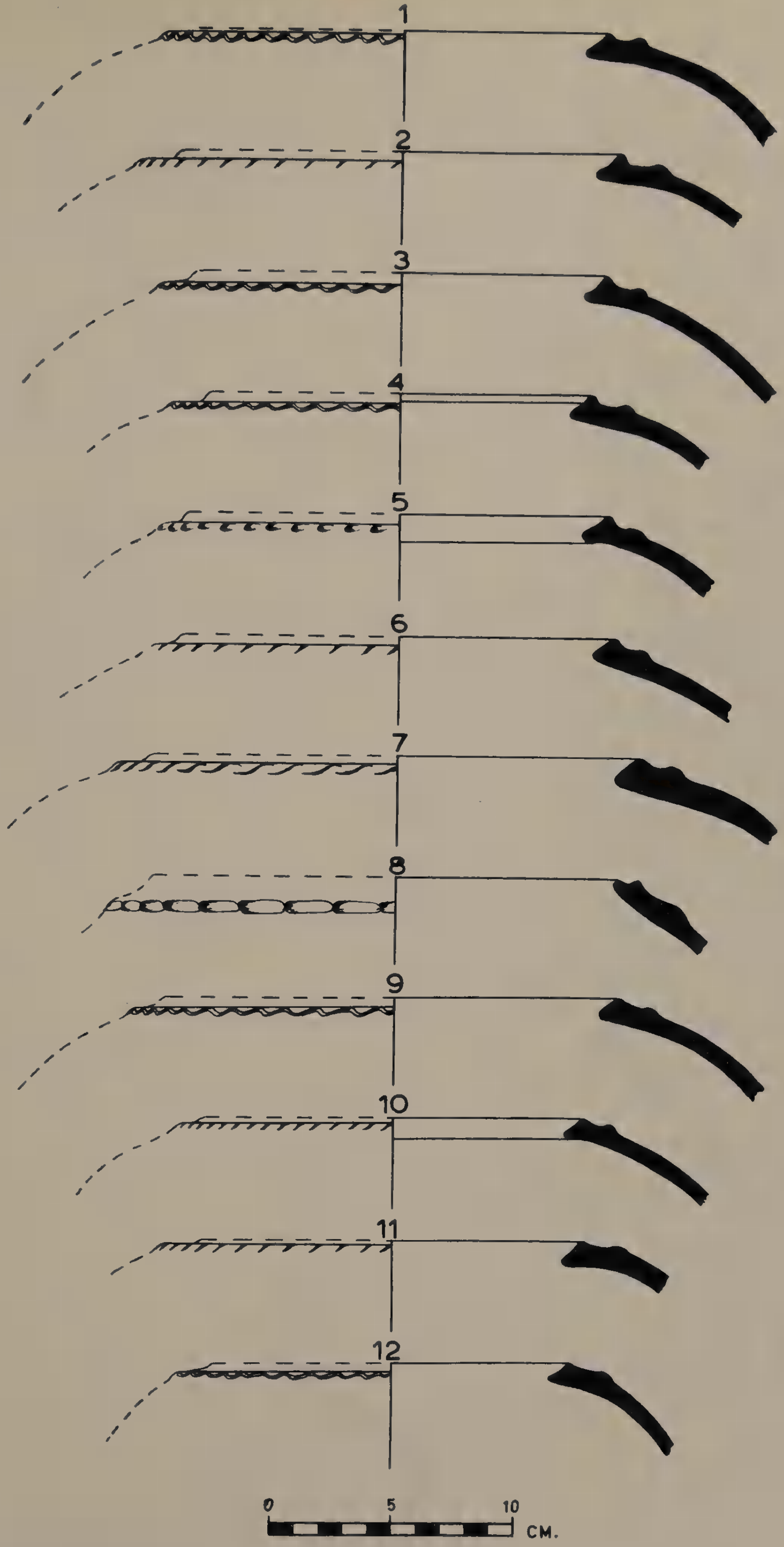


PLATE 10. MB I Pottery from Cave II, Room 2.

Plate 11

Number	*Description*	*Photograph*
11:1	Fine tan ware (" Red " 10R 4/6) ; tan surface (" Light Brown " 7:5YR 6/6) ; well fired; many small limestone inclusions; medium made; rim wheel-made; signs of burning toward spout.	
11:2	Fine reddish-orange ware (" Light Red " 2.5YR 6/8) ; medium fired, irregular dark grey core; few small limestone and few small-medium fire-altered limestone inclusions; medium well made; signs of burning toward spout.	
11:3	Medium coarse tannish-orange ware (" Yellowish Red " 5YR 4/6) ; surface slip (" Pink " 7.5YR 8/4) ; well fired; some small-medium limestone, few small quartz (sand) and fire-altered limestone inclusions; medium well made; slashed raised ridge on jar body sherd.	
11:4	Coarse reddish-orange ware (" Red " 2,5YR 5/6) ; surface slipped (" Pink " 7.5YR 8/4) ; medium fired, irregular light grey core; some small limestone inclusions; medium well made; 2 fairly deep intersecting lines in form of cross on body.	
11:5	Coarse tannish-buff ware (" Red " 2.5YR 5/6) ; poorly fired, irregular grey core; many small limestone inclusions; medium well made; surface slightly combed; neck wheel-made.	
11:6	Very coarse orange-buff ware (" Pink " 7.5YR 7/4) ; medium fired; few small quartz and few small-medium fire-altered limestone inclusions; medium well made; neck wheel-made.	
11:7	Medium-coarse tan ware (" Yellowish Red " 5YR 4/6) ; surface-buff slip (" Pink " 7.5YR 8/4) ; medium fired; few small-medium limestone, few medium fire-altered limestone, and few small quartz inclusions; medium well made; one slash mark on shoulder; neck wheel-made.	

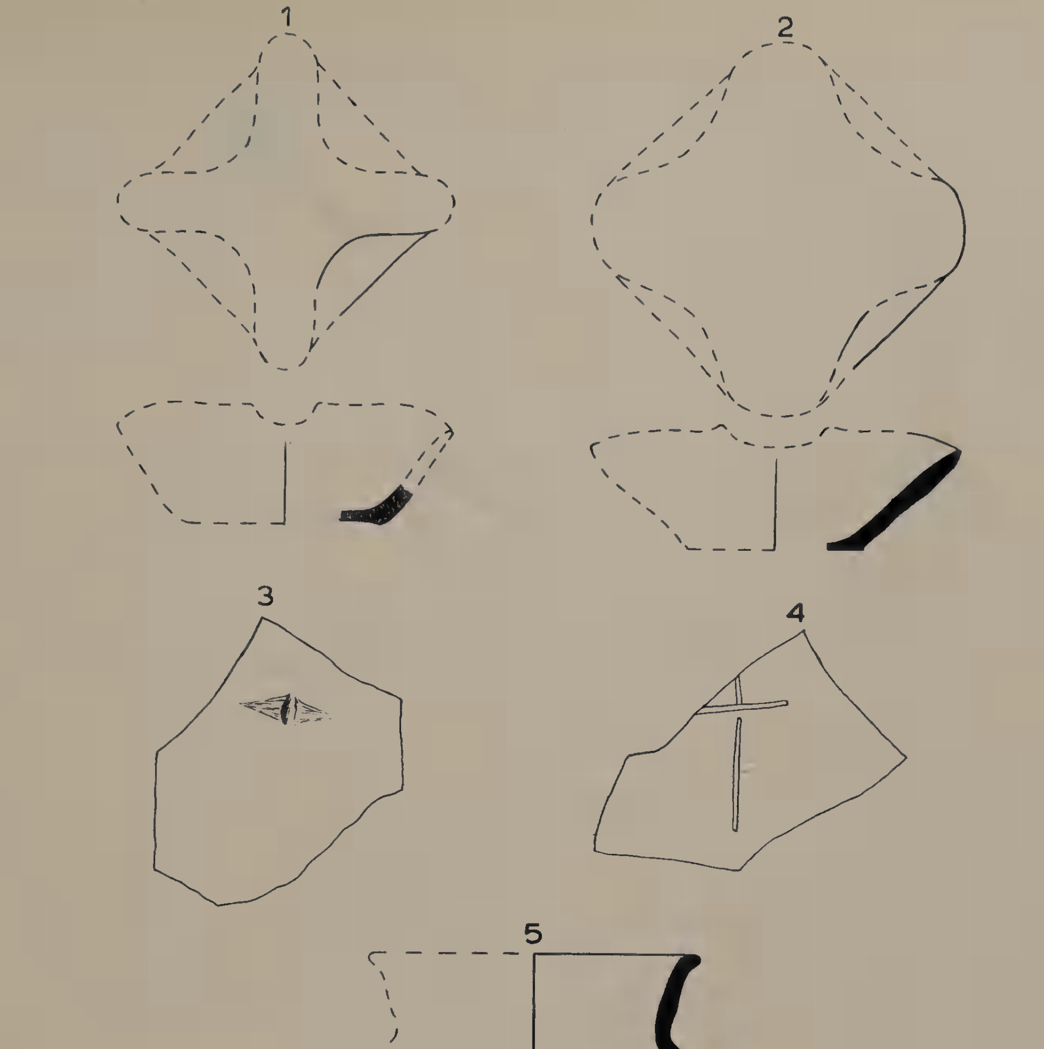


PLATE 11. MB I Pottery from Cave II, Room 2 (Nos. 1-4) and Room 4 (Nos. 5-7).

Plate 12

Number	*Description*	*Photograph*
12:1	Medium-coarse greenish buff ware (" Very Pale Brown " 10YR 7/4—"Olive Grey " 5YR 5/2); surface slip (" Dark Reddish Brown " 5YR 3/3); medium fired; some small-medium limestone and red limestone, few small fire-altered limestone inclusions; medium well made; neck wheel-made.	Pl. 71
12:2	Medium-coarse red to buff ware (" Red " 2.5YR 5/6 interior, " Pale Brown " 10YR 6/3 exterior); medium fired; many small limestone inclusions; medium well made; one band of vertical and one band of oblique slashes below neck; neck wheel-made.	Pl. 71
12:3	Medium coarse red ware (" Red " 2.5YR 5/8); poorly fired, dark grey core; many small limestone inclusions; medium well made; thumb-impressed band below neck; neck wheel-made.	Pl. 71
12:4	Medium grey ware (" Light Brown " 7.5YR 6/4); poorly fired, grey core; many small, few medium limestone inclusions; medium well made; neck wheel-made.	Pl. 71
12:5	Medium creamy tan ware (" Pink " 7.5YR 7/4); medium fired; no core; some small limestone, few medium fire-altered limestone inclusions; poorly made; combing made with 4-point comb.	Pl. 71
12:6	Medium-coarse grey to tan ware (" Reddish Yellow " 5YR 6/6); poorly fired, grey core; few small-medium limestone and fire-altered limestone, few medium ceramic (grog) inclusions; medium made; one 8-point straight combed band, one 4-point wavy combed band; wheel-made.	Pl. 71
12:7	As Pl. 1:5.	Pl. 71
12:8	As Pl. 1:5.	Pl. 71

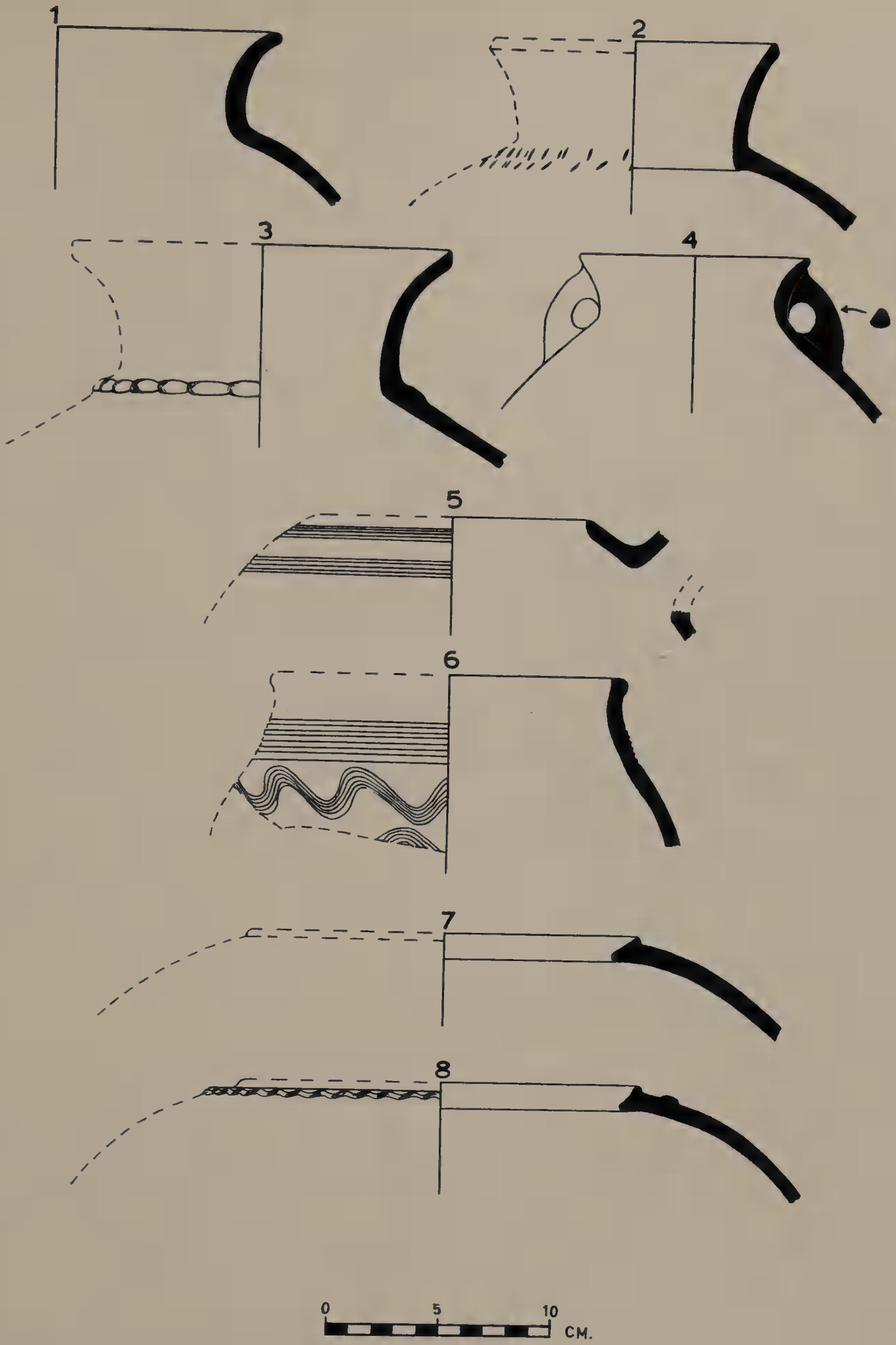


Plate 12. MB I Pottery from Cave II, Room 4.

PLATE 13

Number	*Description*	*Photograph*
13:1	Medium red to greyish-buff ware ("Light Brown" 7.5YR 6/4); interior darker ("Dark Brown" 7.5YR 4/2); medium fired; many small limestone inclusions; well made; raised thumb-impressed band; neck entirely wheel-finished.	Pl. 71
13:2	Medium grey ware ("Light Grey" 10YR 7/2); well-fired, grey core; many small, few medium limestone inclusions; fairly well made; bands made with 4-point comb with thick teeth; neck entirely wheel-finished, rim sharply cut; vestigial lug-handle.	Pl.71
13:3	Medium-coarse orange ware ("Light Red" 2.5YR 6/8); well fired; some small limestone, few small-medium fire-altered limestone inclusions; medium well made; bands made with 6-point comb; wheel-made.	

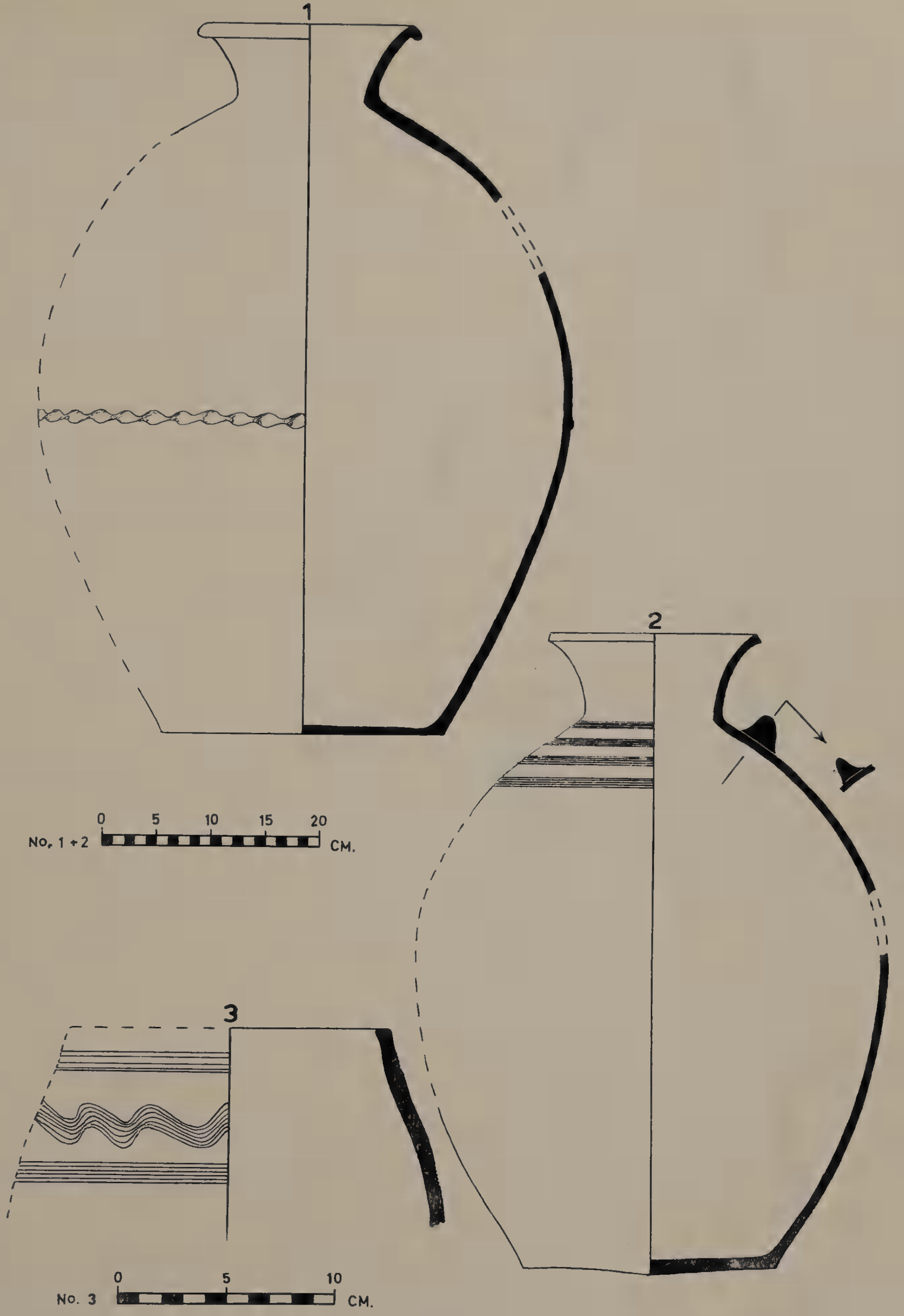


Plate 13. MB I Pottery from Cave II, Room 5.

Descriptions of pottery in Pls. 14-30 are by Nancy L. Lapp, Paul Lapp, and Fouad Zoghbi. The following abbreviations are used: ml—medium levigation; fl—fine levigation; ffl—fairly fine levigation; vfl—very fine levigation; cl—coarse levigation; vcl—very coarse levigation; fcl—fairly coarse levigation.

PLATE 14

Number	*Description*
14:1	tannish buff ware with light orange exterior surface; medium to large white, dark red, and gray to black inclusions; cl.
14:2	burnt dark gray to black; frequent small white and occasional medium white and dark red inclusions; ffl.
14:3	orange buff with traces of burnished black slip exterior; small white inclusions; ffl.
14:4	orange buff; few small white inclusions; fl.
14:5	buff, orange toward surfaces; small to medium white inclusions; fl.
14:6	dark reddish brown to black; many small to large white and crystalline inclusions; cl.
14:7	tan exterior to dark reddish gray interior; many small to larger white, orange, dark red, and gray to black inclusions; fcl; band of incised slashes.
14:8	buff with thick black core; many small to larger white, gray, and crystalline inclusions; vcl.

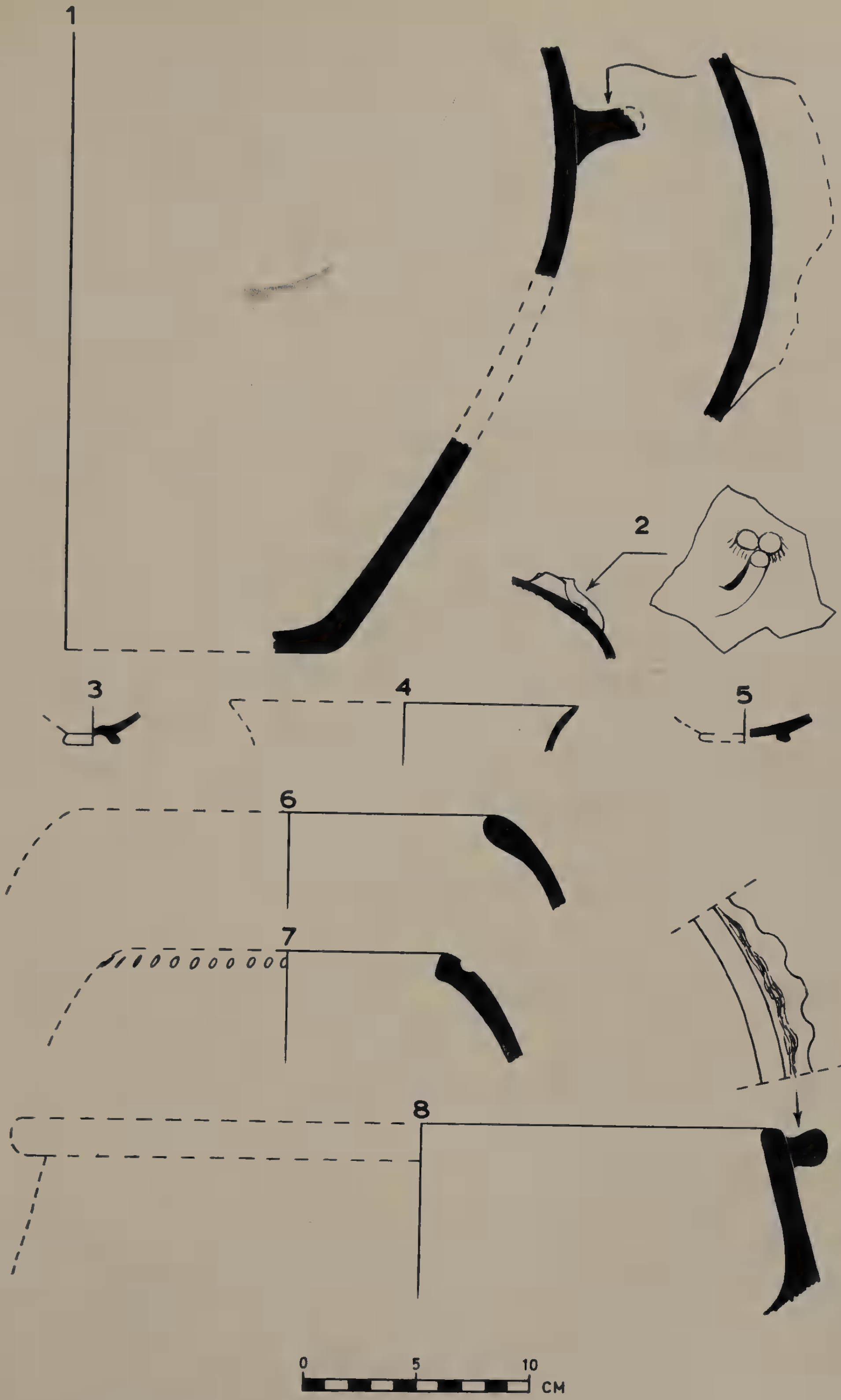


PLATE 14. MB I (Nos. 1, 6, 7) and MB II (Nos. 2-5, 8) Pottery from Cave I.

Plate 15

Number	*Description*
15:1	gray with buff interior surface and orange toward exterior; frequent small to larger white and occasional dark red and black inclusions; ml.
15:2	orange with thick gray core; frequent small to larger white inclusions; mfl.
15:3	buff with creamy surfaces; frequent small to medium black inclusions; ffl; more than half reconstructed.
15:4	orange tan with thick gray core; small to large white, dark red, gray, and black inclusions; cl; signs of firing at spout.
15:5	burnt dark reddish brown with thick black core; many small to larger white and crystalline inclusions; fcl.
15:6	reddish buff with brownish buff core; small to large white and few large black inclusions, burnt and unburnt straw temper; cl.
15:7	orange buff with creamy to tan surfaces; occasional small white inclusions; burnished cream slip exterior rim to carination; ffl; over half reconstructed.
15:8	creamy buff; occasional small to larger white inclusions; ffl.

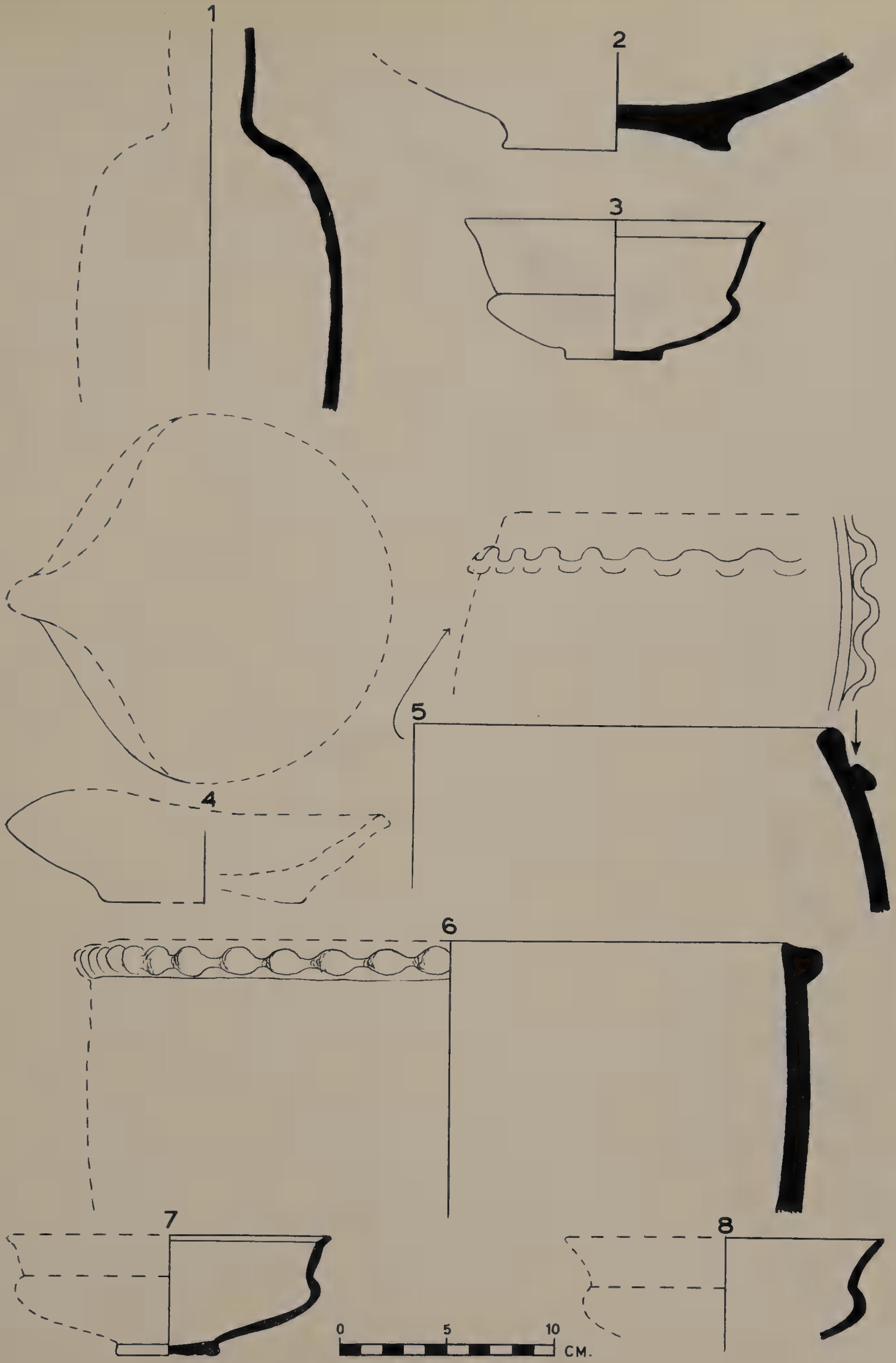


PLATE 15. MB II B-C Pottery from Cave II, Room 2 (Nos. 1-6) and Room 4 (Nos. 7, 8).

PLATE 16

Number	*Description*
16:1	orange buff with irregular gray core; many small to large white and medium to large dark red, gray, and black inclusions; vcl.
16:2	orange with thick gray core; small to larger white, dark red, gray, and black inclusions; ml.
16:3	tannish buff; frequent small and few medium white inclusions; exterior rim to carination vertically burnished; ffl.
16:4	dark reddish brown with thick black core; many small to very large white and large gray inclusions; cl.
16:6	dark reddish brown with gray core; many medium to very large whie and few crysallline inclusions; cl.
16:5	dark reddish brown with gray core; many medium to very large white and few crystalline inclusions; cl.
16:6	as 16:5
16:7	dark reddish black, very small to large white and frequent crystalline inclusive; fcl.

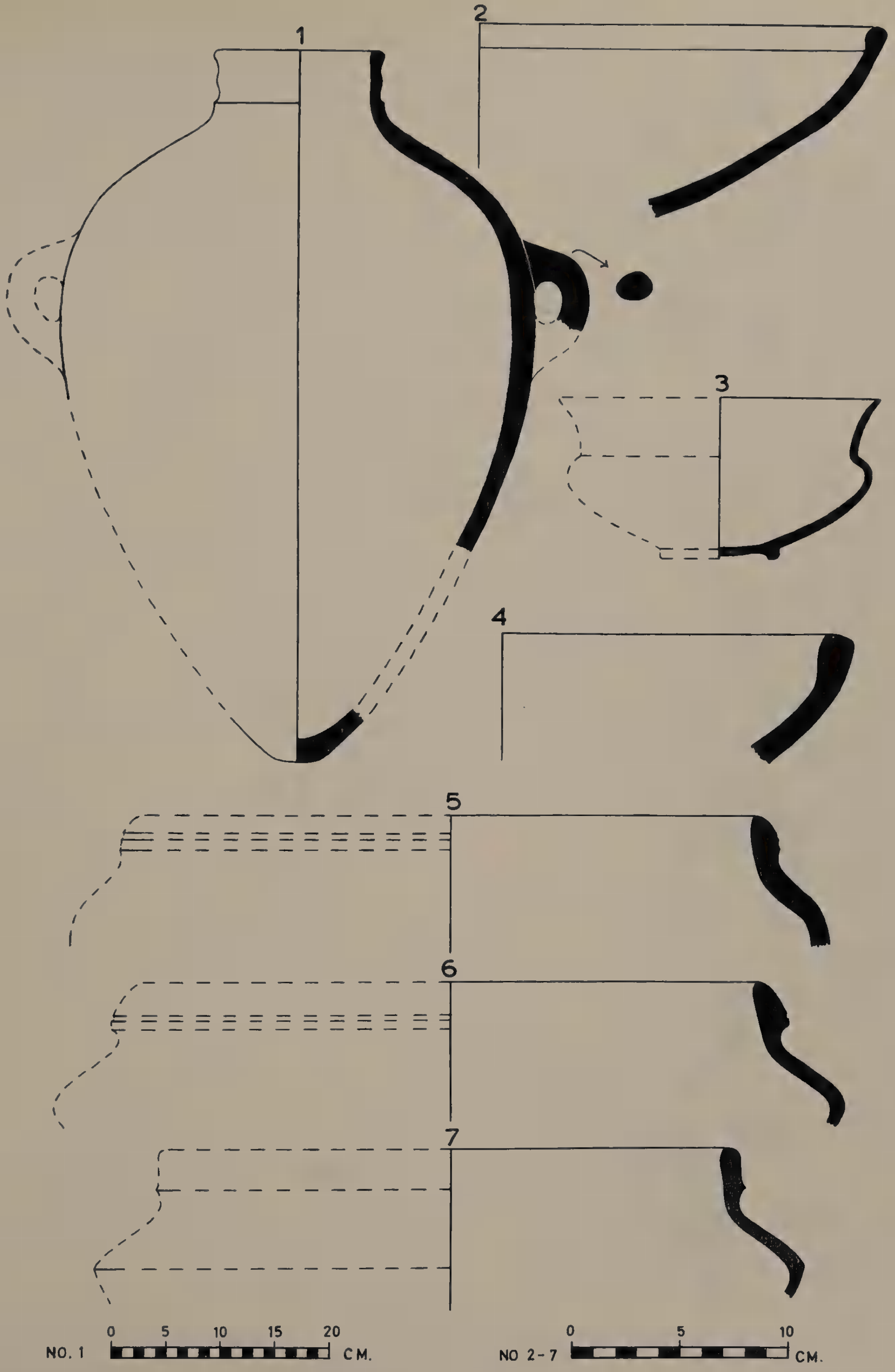


PLATE 16. MB II B-C Pottery from Cave II, Room 5 (Nos. 1-4) and Iron I Pottery from Cave II, Room 2 (Nos. 5-7).

PLATE 17

Number	*Description*
17:1	dark reddish black with thick black core; many small to large white, gray, and crystalline inclusions, cl.
17:2	dark reddish brown with thick black core; many small to large white, dark red, gray, and crystalline inclusions; cl.
17:3	dark reddish brown; many small to large white, dark red, gray, and crystalline inclusions; fcl.
17:4	dark red with thick black core; many small to very large white and some crystalline inclusions; cl.
17:5	gray with buff exterior surface, small to large white, dark red, gray, and black inclusions; fcl.
17:6	reddish brown with buff exterior surface; medium dark red and gray to black inclusions; ml.
17:7	badly burnt dark brown with gray core; many small white inclusions; ring-burnished burnt red slip rim to interior; ffl.
17:8	dark red with thick tan core; many small to medium white and crystalline inclusions; fcl.

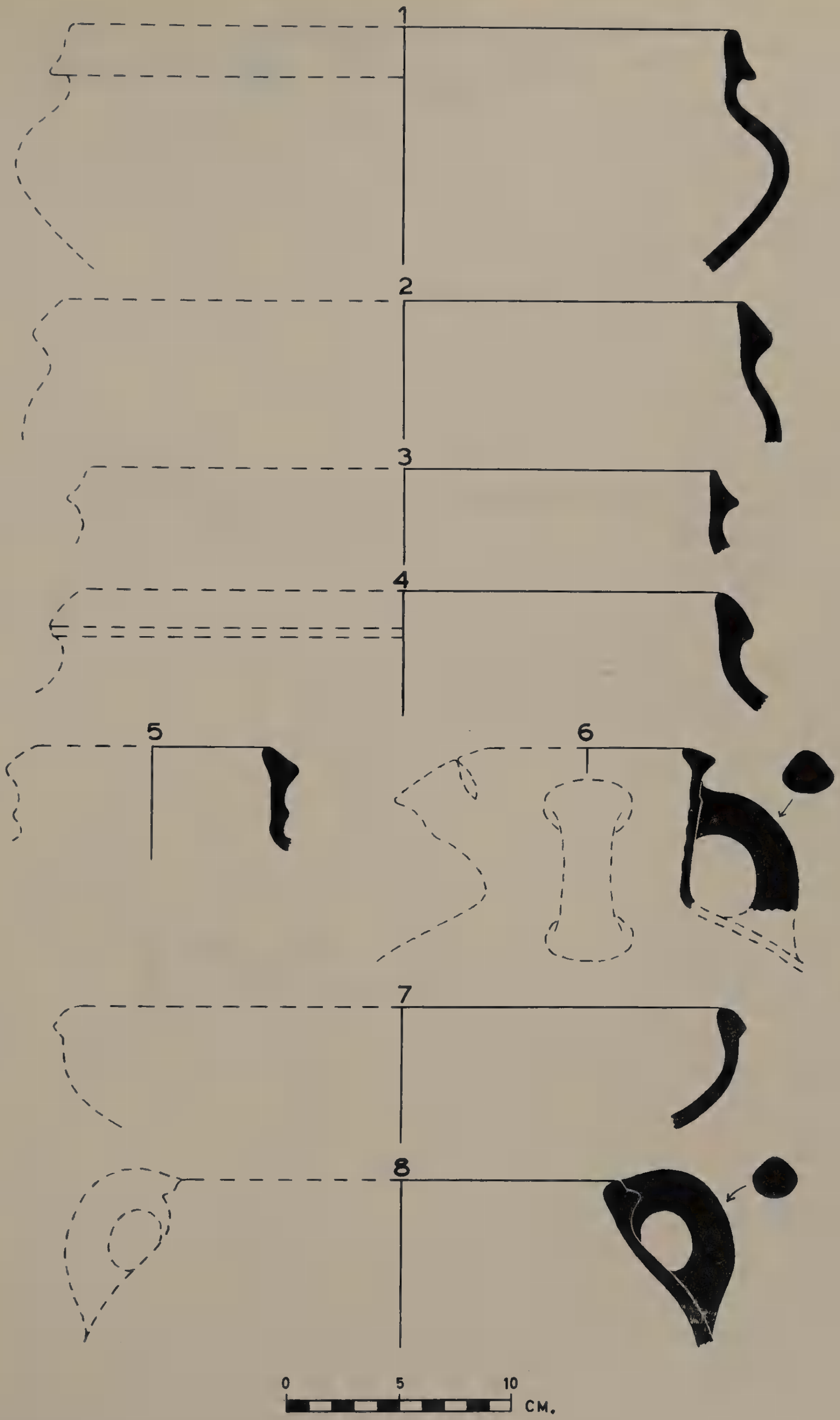


PLATE 17. Iron I Pottery from Cave II, Room 2 (No. 1) and Room 4 (Nos. 2, 3), and Iron II Pottery from Cave I (Nos. 4-8).

PLATE 18

Number	*Description*	*Photograph*
18:1	gray with tan exterior surface; few small to large white inclusions; ml; complete except for one handle.	Pl. 72
18:2	gray interior half; tan exterior half; large to small white inclusions; ml; completely reconstructed.	Pl. 72
18:3	gray, with tan exterior surface; frequent small to medium white inclusions; ml; partial rim to one handle reconstructed.	
18:4	dark gray with yellow surfaces; few small to large white inclusions; ml; sherds reconstructed: complete rim and one handle.	
18:5	reddish brown; frequent small to large white inclusions; ml; sherds reconstructed; complete rim, one complete handle, one fragmentary handle.	

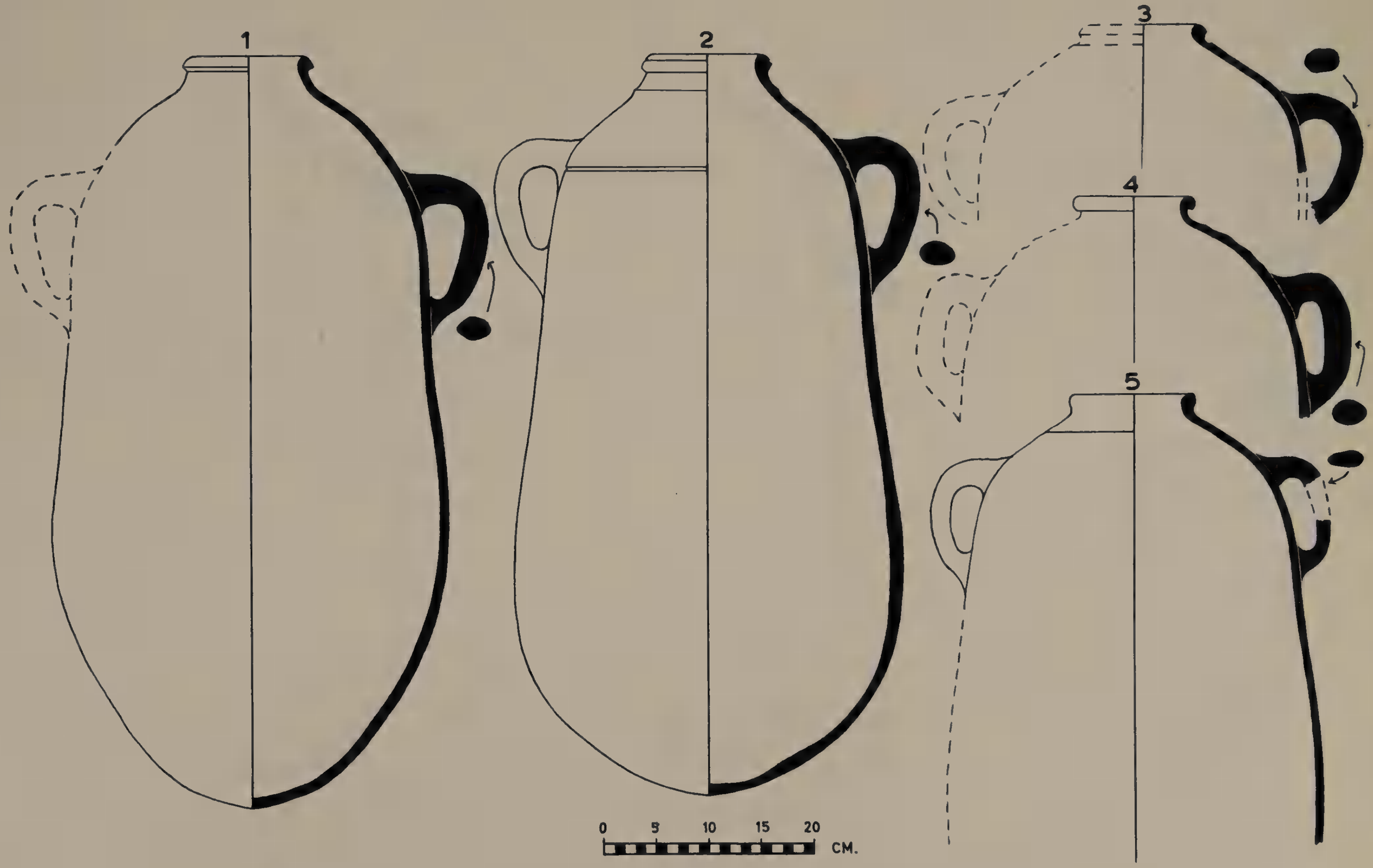


Plate 18. Late Persian Storage Jars from Cave I.

PLATE 19

Number	*Description*	*Photograph*
19:1	tan graying toward interior; few small white and few dark inclusions; ml; reconstructed but one handle missing.	Pl. 73
19:2	gray, with tan exterior surface; few white inclusions; ml; completely reconstructed.	Pl. 76
19:3	gray with tan toward exterior surface; small white inclusions; ml; reconstructed but part of one side missing.	Pl. 73

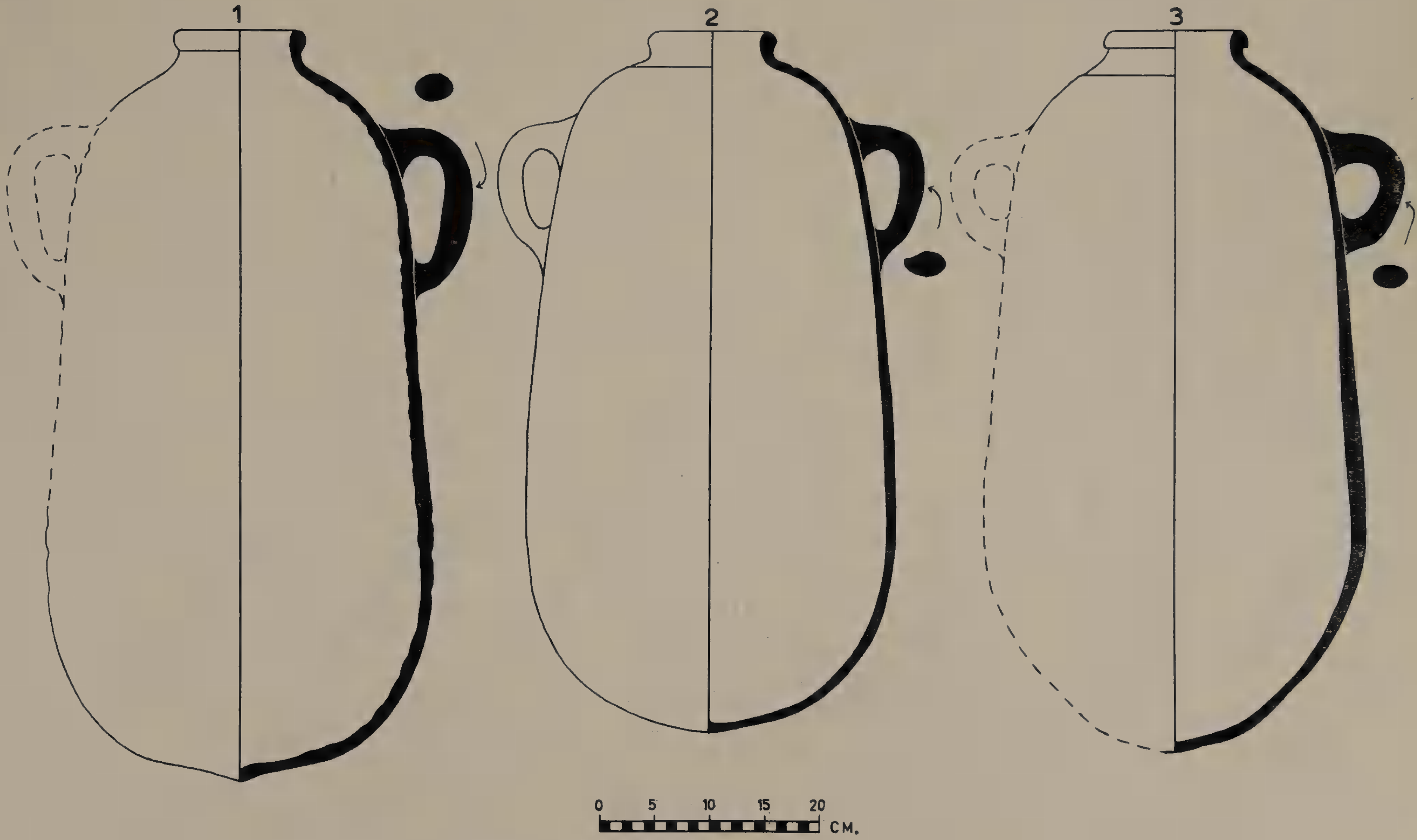


PLATE 19. Late Persian Storage Jars from Cave I.

Plate 20

Number	*Description*	*Photograph*
20:1	yellow brown with thin gray core; few small white inclusions; ml; complete rim reconstructed.	Pl. 74
20:2	gray with tan exterior surface; white and tan inclusions; ml; rim fragments.	Pl. 74
20:3	gray with reddish brown toward exterior surfaces; white inclusions; ml; rim fragment.	Pl. 74
20:4	gray to tan at surfaces; small white and black inclusions, few large red inclusions; ml; rim fragment.	Pl. 74
20:5	reddish brown with gray core; frequent small to medium white inclusions; ml; rim sherd.	Pl. 74
20:6	dark brown; frequent small to large white and few dark red inclusions; ml; rim sherds.	Pl. 74
20:7	tan with gray core; white and gray inclusions; ml; complete rim reconstructed.	Pl. 74

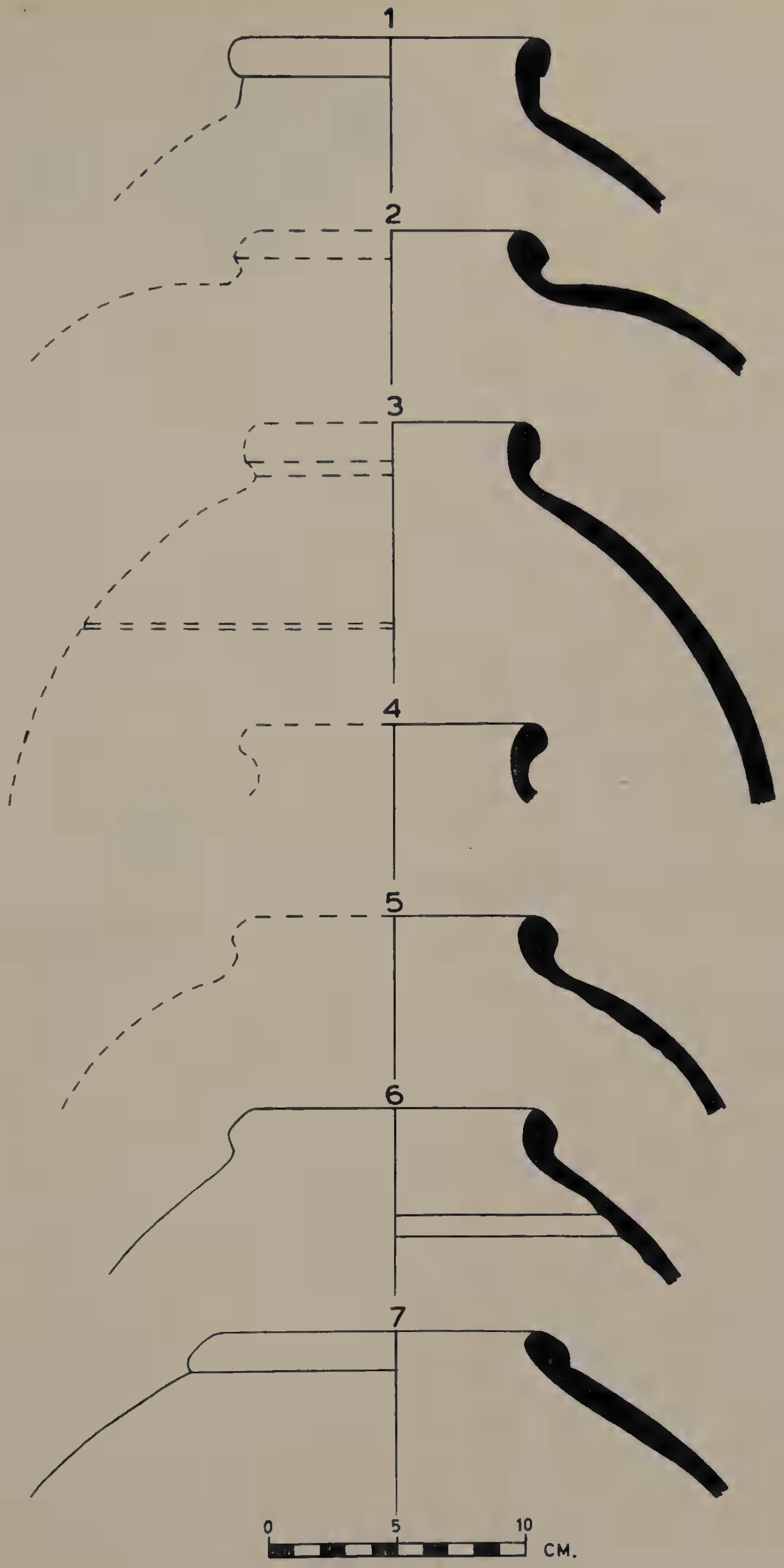


Plate 20. Late Persian Jar Rims from Cave I.

PLATE 21

Number	*Description*	*Photograph*
21:1	reddish brown with gray core; frequent small to medium white inclusions; ml; completely reconstructed.	Pl. 75
21:2	gray with tan surfaces; white inclusions; fcl; rim and handle fragment.	
21:3	tan with reddish brown surfaces and gray core; small white incusions; ml; completely reconstructed.	

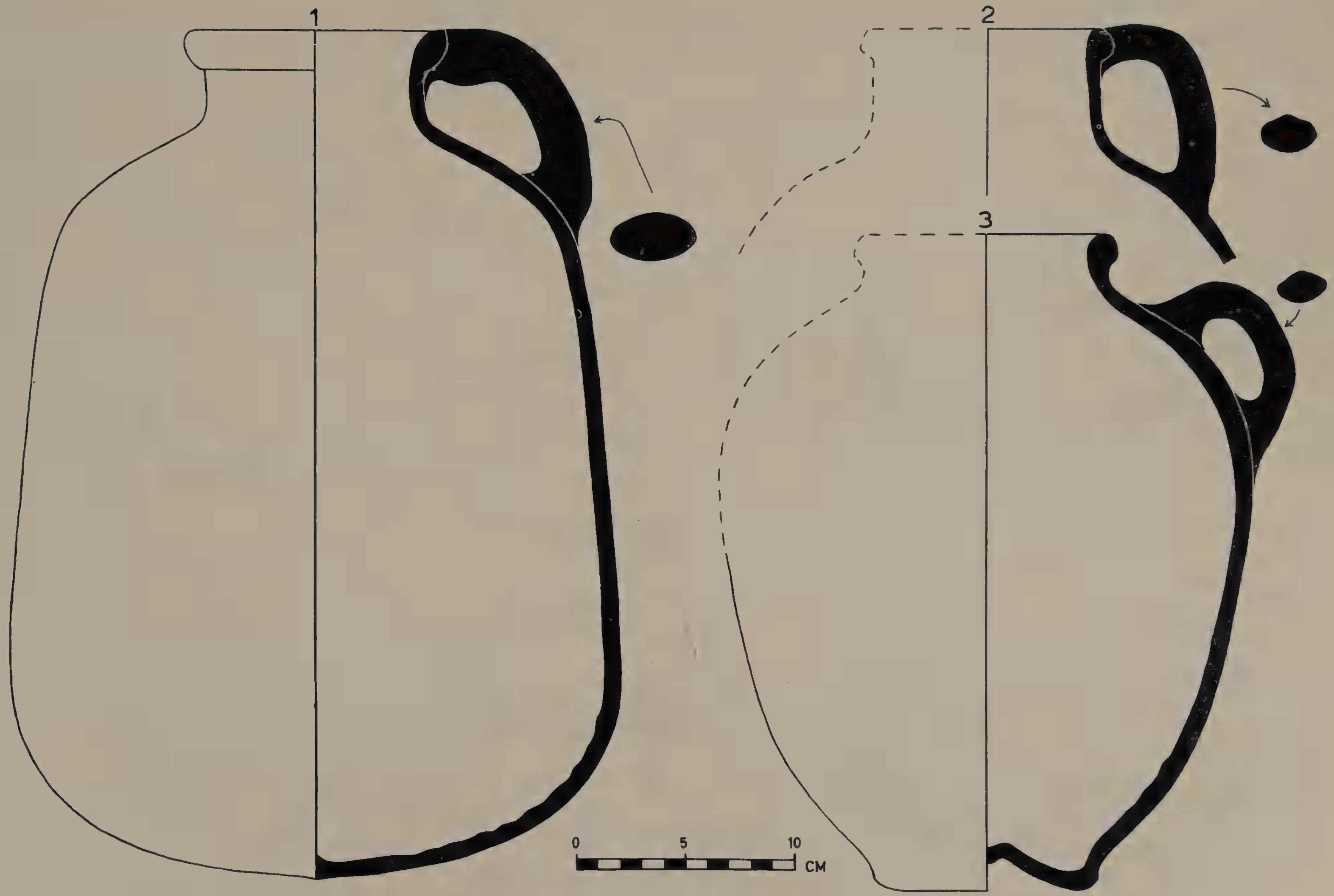
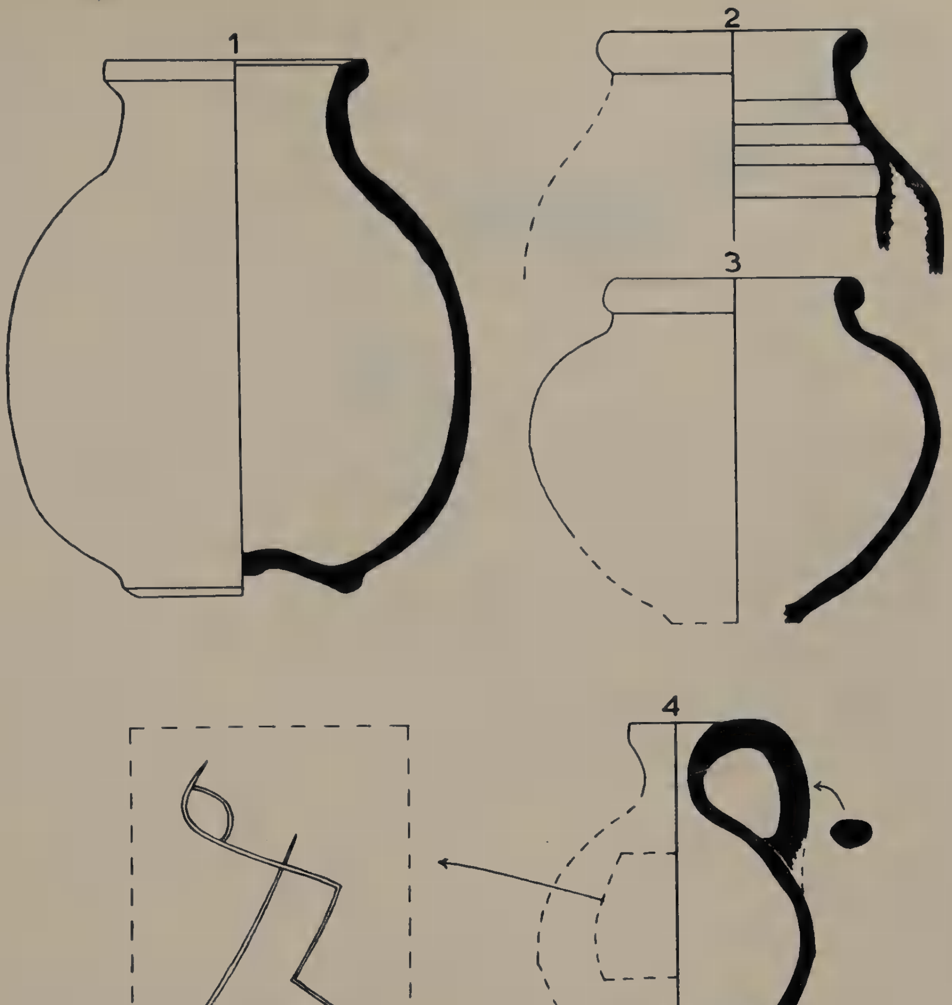


Plate 21. Late Persian Jugs from Cave I.

Plate 22

Number	*Description*	*Photograph*
22:1	tan; white, gray, and reddish brown inclusions; ml; completely reconstructed.	Pl. 74
22:2	gray with tan toward surfaces; small to large white inclusions; ml; complete rim, no handles unless one where side is missing; bubbled ware on one side.	Pl. 74
22:3	gray with tan toward exterior; white and few black inclusions; ml; reconstructed rim to base.	Pl. 74
22:4	gray to brown; white and black inclusions; ml; complete rim to base including handle reconstructed.	Pls. 74, 75
22:5	brown; frequent small inclusions; ml; rim and neck fragments	Pl. 74
22:6	tan; fairly large black inclusions; fcl; base to rim fragments and evidence of a handle, but missing.	Pl. 74
22:7	gray with reddish brown toward exterior; white inclusions; ml; body and base fragments reconstructed, no neck or rim.	Pl. 74



Peate 22. Late Persian Pottery from Cave I.

Plate 23

Number	*Description*	*Photograph*
23:1	deep tan; white and black inclusions; fcl; completely reconstructed from sherds.	Pl. 75
23:2	reddish brown with gray core; white and crystalline inclusions; ml; reconstructed rim, two handles, body and base.	Pl. 76
23:3	reddish brown; white, crystalline, and few black inclusions; ml; complete rim, one handle and most of second handle reconstructed.	Pl. 76
23:4	red; few tiny to medium white inclusions; ffl; one complete side reconstructed.	
23:5	light grayish brown; tiny to medium dark brown and black inclusions; ffl.	
23:6	brownish dark red; few tiny white and few tiny black inclusions; ffl.	

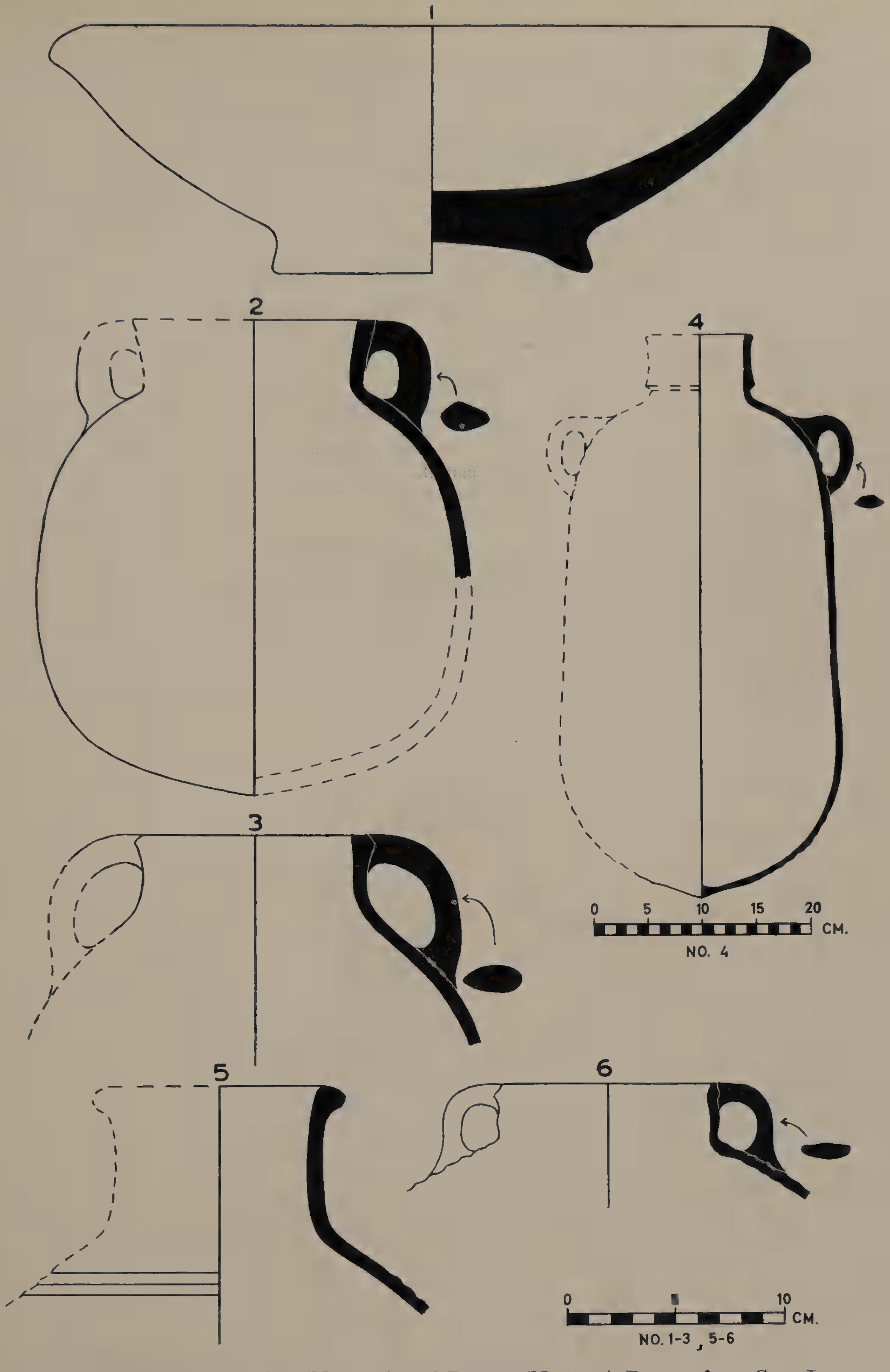


Plate 23. Late Persian (Nos. 1-3) and Roman (Nos. 4-6) Pottery from Cave I.

Plate 24

Number	*Description*	*Photograph*	*Locus*
24:1	grayish brown; orange tan toward surfaces; tiny to medium white and tiny to medium dark brown inclusions; ffl.	Pl. 78	II.4.8
24:2	brown; few tiny to large white and few tiny to medium dark brown inclusions; ffl.		II.2.9
24:3	buff; tan toward exterior surface; tiny to medium white and few gray inclusions; ffl.		II.7
24:4	buff; orange toward exterior surface; few tiny to medium white and tiny to medium dark brown inclusions; ffl; reconstructed but not complete.	Pl. 77	II.4.10
24:5	grayish brown; orange tan toward surfaces; few tiny to large white and medium black inclusions; ffl.		II.4.16

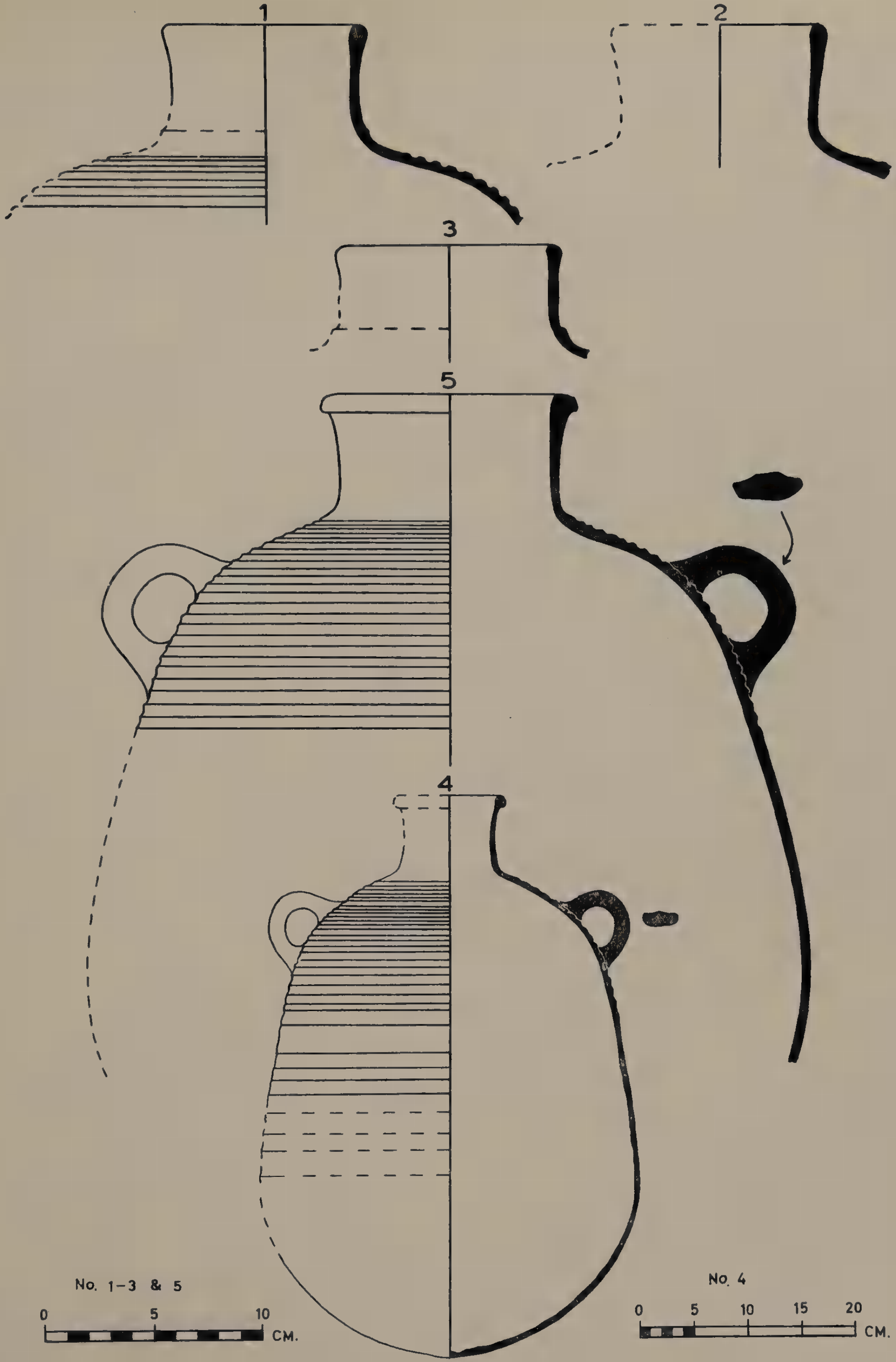
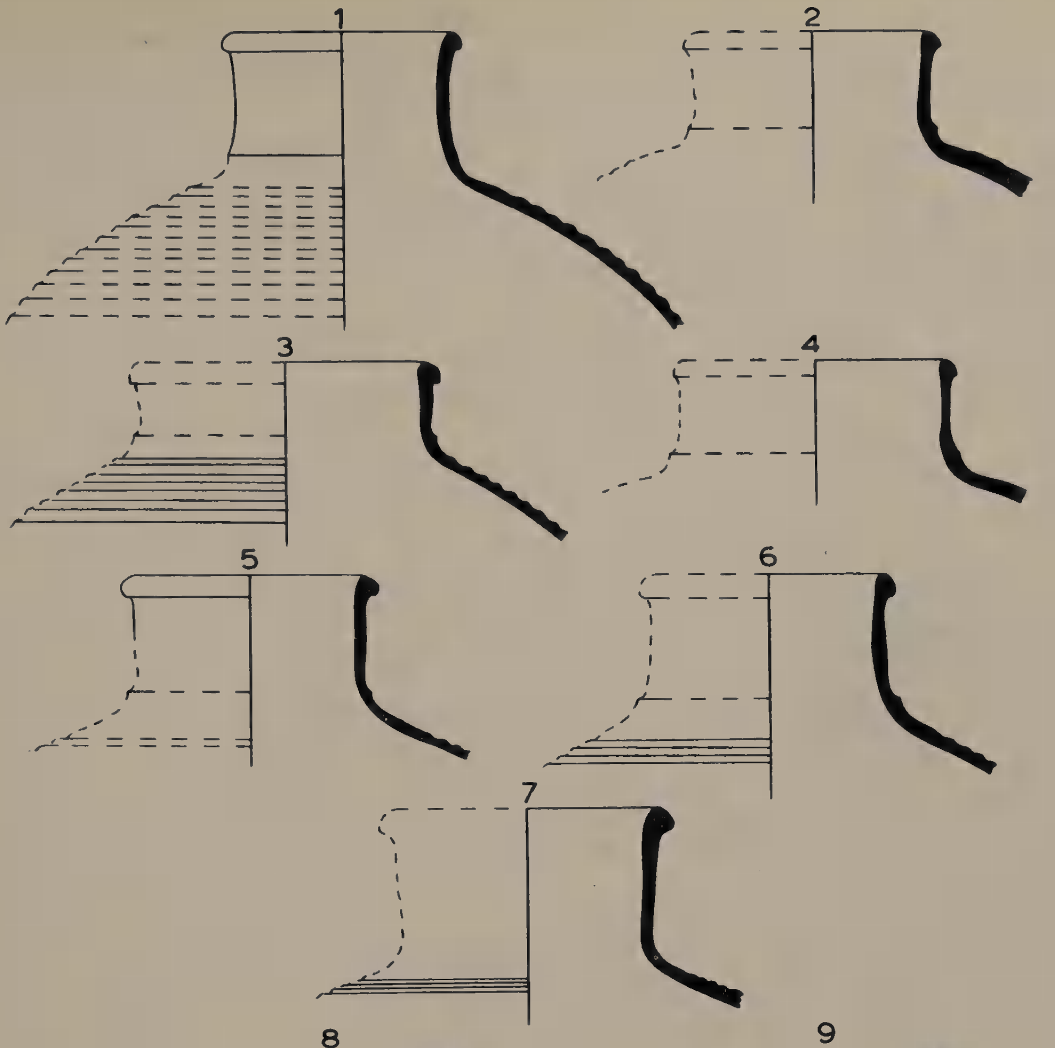


Plate 24. Second Revolt Storage Jars from Cave II.

PLATE 25

Number	*Description*	*Photograph*	*Locus*
25:1	buff, orange tan toward surfaces; few tiny to medium white and few tiny to medium dark brown inclusions; ffl.		II.4.16
25:2	reddish orange; few tiny to medium white and very few tiny to medium dark brown inclusions; ffl.		II.4.19
25:3	brownish cream; orange tan toward surfaces; few tiny to medium white and tiny to medium brown inclusions; ffl.		II.7
25:4	red; few tiny to medium white and very tiny dark brown inclusions; ffl.		II.4.19
25:5	reddish orange, buff toward surfaces; tiny to medium white and few tiny gray inclusions; ffl.		II.4.16
25:6	buff, reddish orange toward surfaces; few tiny to medium white and more tiny to medium dark brown inclusions; ffl.		II.6
25:7	grayish brown, orange tan toward surfaces; few tiny to medium white and more tiny to medium dark brown inclusions; ffl.		II.4.16
25:8	light brown, reddish brown toward interior surface; tiny to large white and tiny to medium dark brown inclusions; ffl.	Pl. 78	II.7
25:9	buff core, reddish brown and buff toward surfaces; few tiny to large white and tiny to medium dark brown inclusions; ffl.		II.7
25:10	light brown, red toward surfaces, few tiny to medium white and tiny to medium dark brown inclusions; ffl.		II.4.16
25:11	light buff, light brown toward surfaces; few tiny white and tiny to medium dark brown inclusions; ffl.		II.4.5



Pdate 25. Second Revolt Jar Rims from Cave II.

Plate 26

Number	*Description*	*Photograph*	*Locus*
26:1	light buff, light brown toward surfaces; few tiny to medium white and tiny dark brown inclusions; ffl.		II.6
26:2	light brown, orange tan toward surfaces; very few tiny white and many tiny dark brown inclusions; ffl.		
26:3	light buff, reddich orange toward surfaces; few tiny to large white and tiny to large dark brown inclusions; ffl.		II.6
26:4	reddish orange, buff toward surfaces; few tiny to medium white and few tiny to medium dark brown inclusions; ffl.	Pl. 77	II.7
26:5	dark gray, red toward surfaces; tiny to medium white and few tiny gray inclusions; ffl.		II.2.9
26:6	buff at center, light brown, and then creamy surface on exterior; tiny to medium white and few tiny to medium dark brown and black inclusions; ffl.		II.2.10
26:7	buff, reddish brown toward surfaces; tiny to large white and tiny to large dark brown and gray inclusions; ffl.		II.1
26:8	reddish brown with a thin light brown band core; many very tiny white and few dark brown and gray inclusions; ffl.		II.7
26:9	light brown; tiny to medium white and few tiny to medium dark brown and gray inclusions; ffl.		II.4.2
26:10	buff, light brown toward surfaces; tiny to medium white and tiny to large dark brown inclusions; ffl.		II.4.16

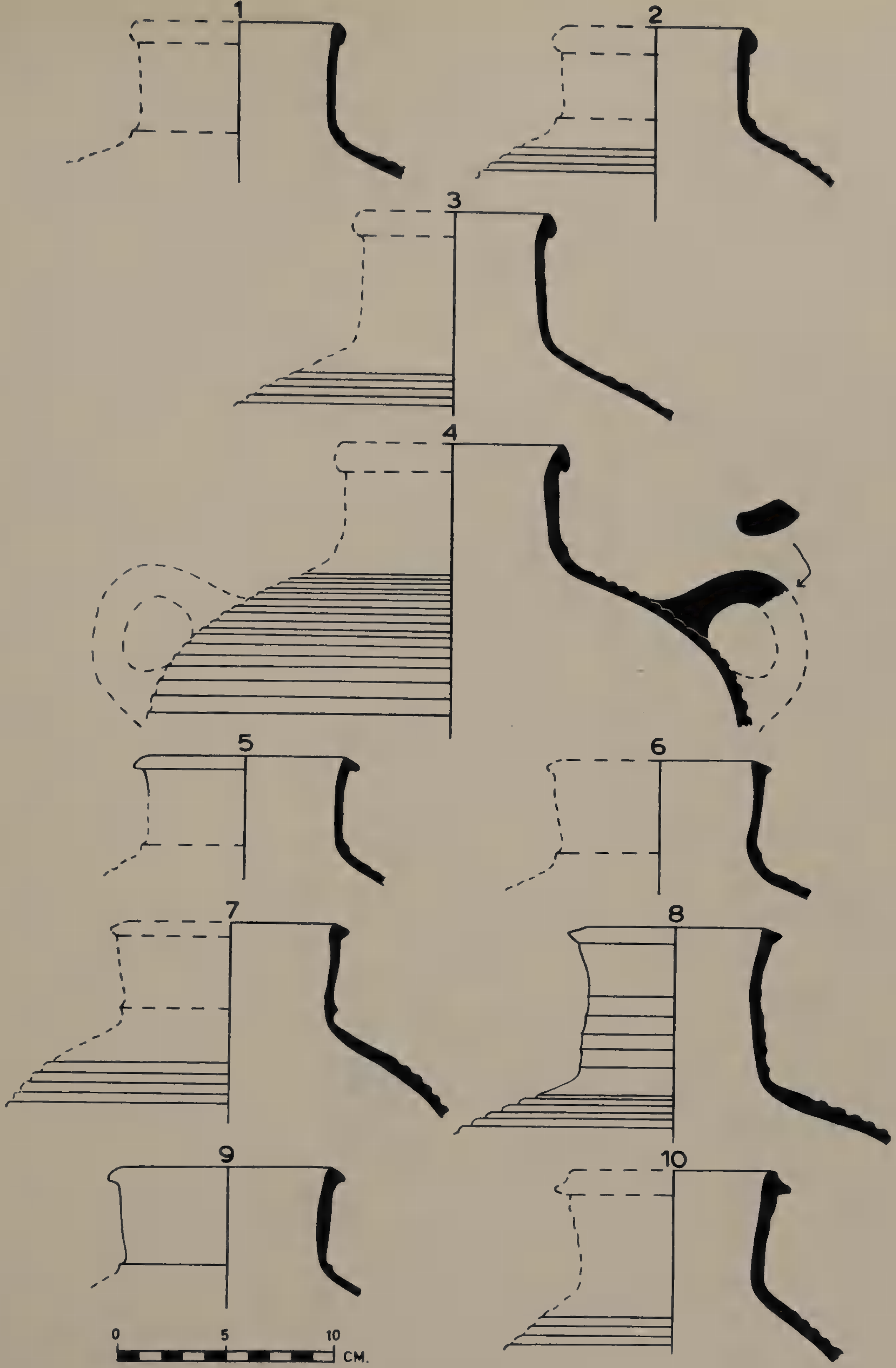


PLATE 26. Second Revolt Jar Rims from Cave II.

PLATE 27

Number	*Description*	*Photograph*	*Locus*
27:1	greenish; many tiny to medium dark brown and black inclusions; ffl.		II.7
27:2	light brown, reddish brown toward surfaces; few tiny to medium white and few tiny dark brown inclusions; ffl.	Pl. 77	II.4.16
27:3	grayish brown, reddish brown toward surfaces; few tiny to large white and few tiny to medium black inclusions; ffl.		II.2.9
27:4	grayish brown, orange tan toward surfaces; few tiny to medium white and tiny to medium dark brown inclusions; ffl.		II.2
27:5	grayish brown, orange tan toward surfaces; few tiny to medium white and tiny to medium dark brown inclusions.		II.2.4
27:6	grayish brown, reddish brown toward surfaces; very tiny white and tiny to medium dark brown and gray inclusions; ffl.	Pl. 77	II.7
27:7	grayish brown, a little bit cream toward surfaces, very few tiny white and more dark brown and gray inclusions; ffl.	Pl. 77	II.4.1
27:8	very dark brownish with a greenish cast, greenish at surfaces; few tiny to medium white and few tiny to medium gray inclusions; ffl.		II.2.10
27:9	dark grayish brown, dark red toward surfaces; very tiny white and more tiny to medium dark brown and gray inclusions; ffl.		II.4.16
27:10	creamy light brown, reddish brown surfaces; tiny to medium white and tiny to medium dark gray and brown inclusions; ffl.		II.2.9
27:11	greenish gray, orange tan toward surfaces; tiny to medium dark brown and dark gray inclusions; ffl.	Pl. 78	II.7
27:12	grayish brown, orange tan toward surfaces; tiny to medium white and tiny to medium dark brown inclusions; ffl.		II.2.9
27:13	reddish brown; was burnt in fire; few tiny medium white and few tiny dark brown inclusions; ffl.	Pl. 78	II.4.20

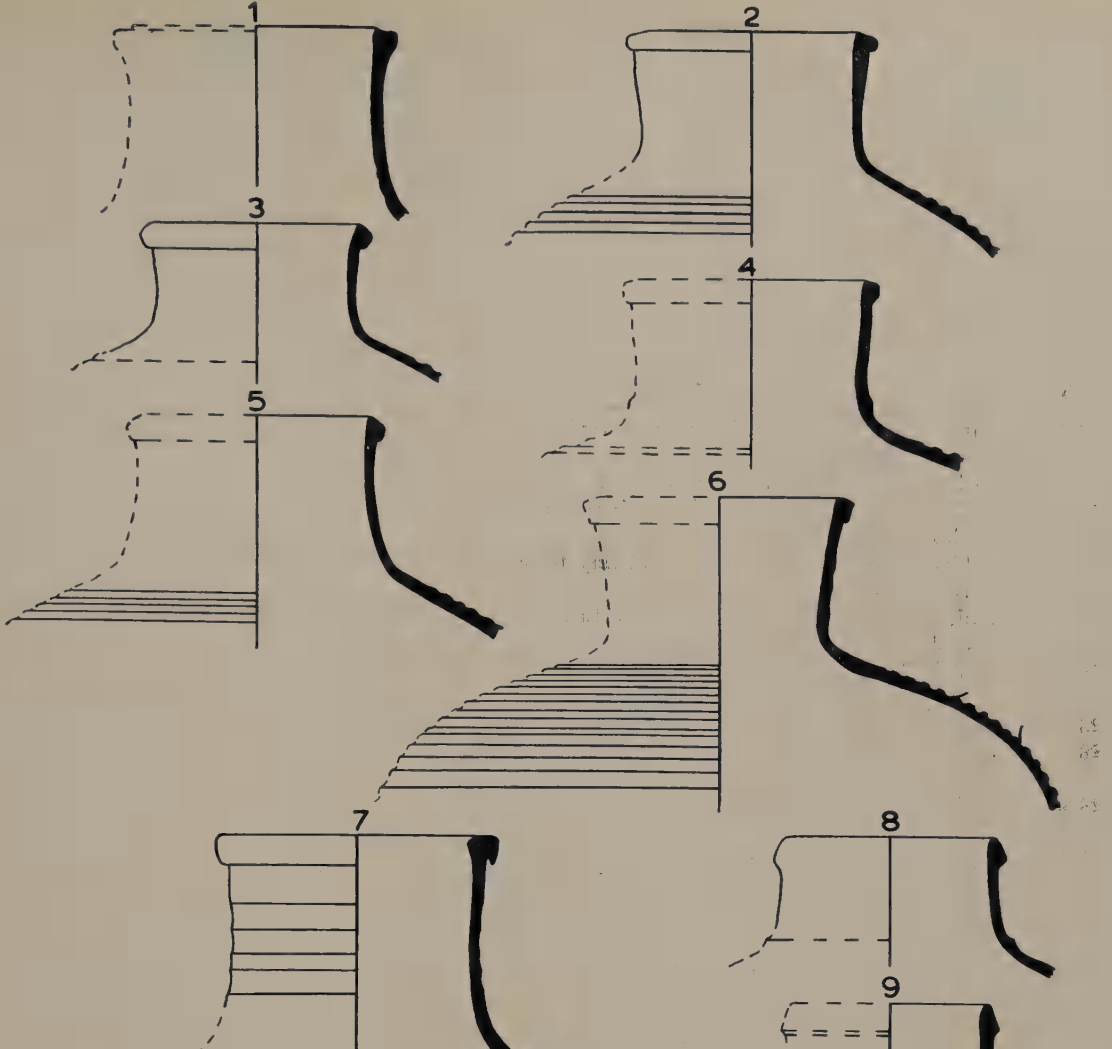


PLATE 27. Second Revolt Jar Rims from Cave II.

Plate 28

Number	*Description*	*Photograph*	*Locus*
28:1	dark brown, dark reddish brown toward exterior surfaces; few tiny white inclusions; ffl.	Pl. 79	II.4.17
28:2	dark red; few tiny white inclusions; ffl.		II.4.8
28:3	buff, dark red toward exterior surface; tiny white and few tiny to medium dark gray inclusions; ffl.		II.4.16
28:4	reddish brown; few tiny white and tiny to medium dark brown and gray inclusions; ffl.	Pl. 79	II.4.16
28:5	buff, reddish brown toward surfaces; tiny to medium white and few tiny dark brown inclusions; ffl.	Pl. 79	II.4.13
28:6	light buff, orange tan toward surfaces; very few tiny white and tiny to large dark brown inclusions; ffl.	Pl. 79	II.4.16
28:7	brown; tiny to medium creamy and dark brown inclusions; ffl.	Pl. 79	II.7
28:8	dark gray, dark buff toward surfaces; few tiny to medium white inclusions; ffl.	Pl. 79	II.4.19
28:9	dark gray core and red toward surfaces, few tiny white inclusions; ffl.	Pl. 79	II.2.10
28:10	light grayish brown; few tiny white and few tiny dark brown inclusions; ffl.	Pl. 79	II.4.2
28:11	dark brown, orange tan toward surfaces; very tiny white and few tiny black inclusions; ffl.	Pl. 79	II.6
28:12	dark brown; tiny white and few tiny gray inclusions; ffl.	Pl. 79	II.4.19
28:13	grayish brown, orange tan toward surfaces; few tiny white and very few tiny dark brown inclusions; ffl.	Pl. 79	II.4.16
28:14	grayish brown, reddish toward surfaces; few very tiny white and very few tiny dark brown inclusions; ffl.	Pl. 79	II.1
28:15	buff, reddish brown toward surfaces; few tiny white inclusions; ffl.	Pl. 79	II.4.2
28:16	light grayish brown; few tiny white and tiny to medium dark brown inclusions; ffl.	Pl. 79	II.4.20
28:17	dark brown, dark reddish brown toward surfaces; tiny to medium white inclusions; ffl.	Pl. 79	II.4.11
28:18	dark brownish orange; very few tiny white and very few tiny black inclusions; ffl.	Pl. 79	II.1.1
28:19	dark brown burnt; very few tiny white inclusion; ffl.	Pl. 79	II.2.10

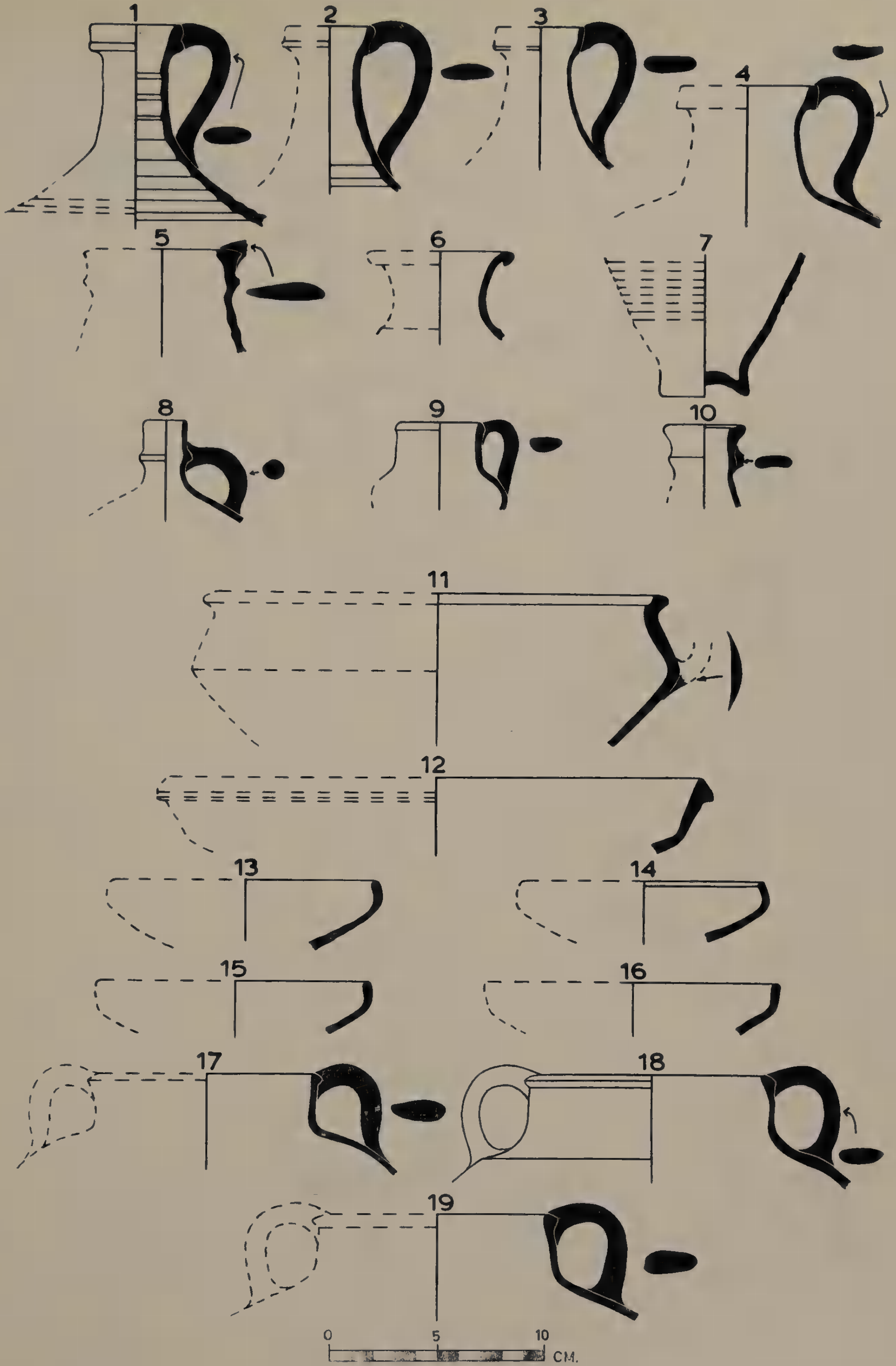


Plate 28. Second Revolt Pottery from Cave II.

PLATE 29

Number	*Description*	*Photograph*	*Locus*
29:1	dark brown, burnt; very few tiny dark brown inclusions; ffl.	Pl. 79	II.2.4
29:2	dark grayish brown, reddish brown toward surfaces; few tiny to medium white and tiny to medium gray inclusions; ffl.	Pl. 79	II.1
29:3	brown, reddish brown toward surfaces; few tiny white inclusions ffl.	Pl. 79	II.4.8, 13
29:4	dark brown, reddish brown toward surfaces; very few tiny white inclusions; ffl.	Pl. 79	II.6
29:5	dark buff, dark brown toward surfaces; very few tiny white inclusions; ffl.	Pl. 79	II.2.4
29:6	reddish brown, dark brown toward surfaces; few tiny white inclusions; ffl.	Pl. 79	II.6
29:7	dark brown, reddish brown toward surfaces; few tiny white inclusions; ffl.	Pl. 79	II.4.14
29:8	dark brown; few tiny white inclusions; ffl.	Pl. 79	II.4.21
29:9	dark brown, reddish toward surfaces; very few tiny white inclusions; ffl.	Pl. 79	II.4.16
29:10	dark brown, reddish toward surfaces; few tiny white inclusions, ffl.		II.4.14
29:11	dark brownish red; tiny white inclusions; ffl.		II.4.16

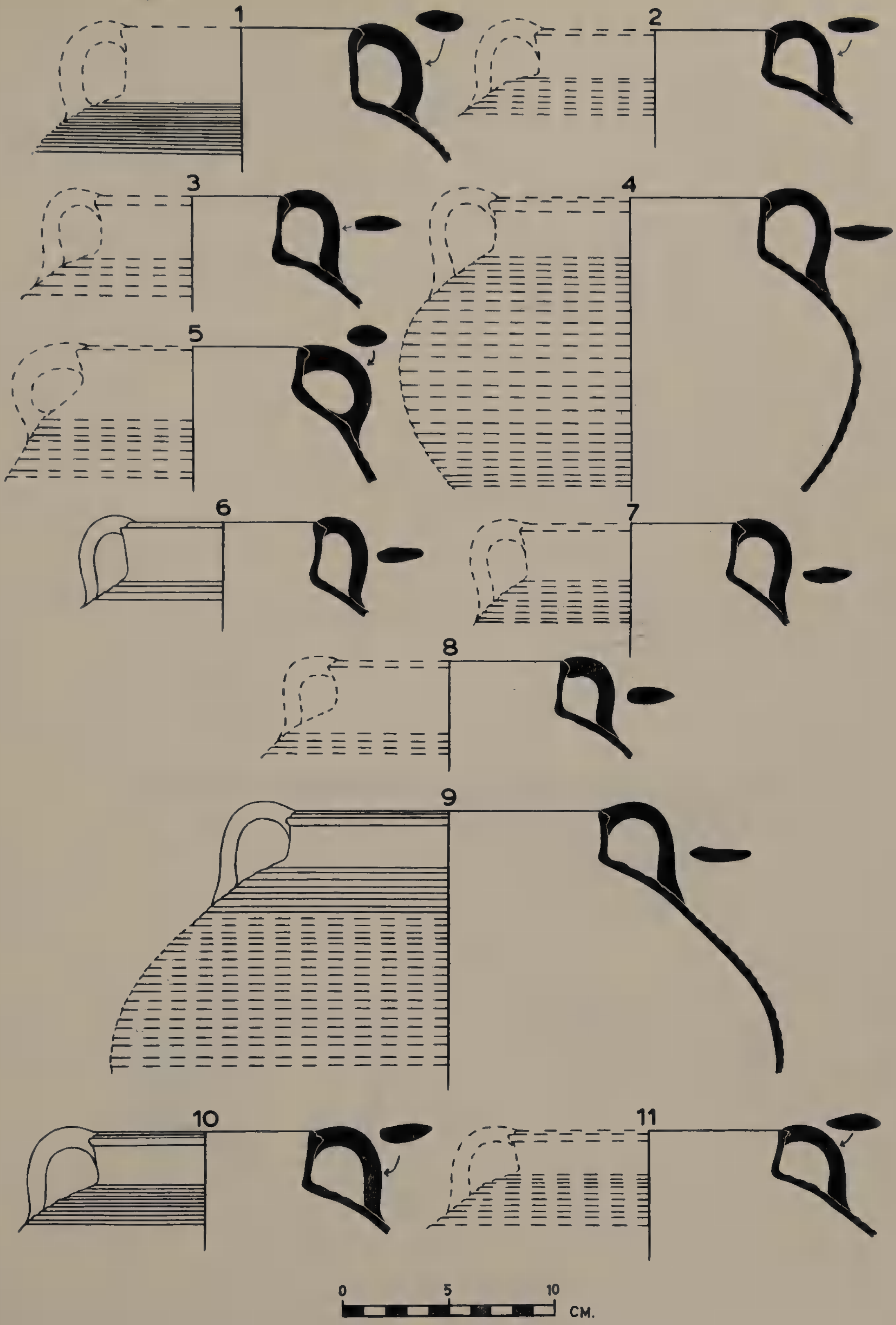


Plate 29. Second Revolt Cooking Pot Rims from Cave II.

Plate 30

Number	*Description*	*Photograph*	*Locus*
30:1	dark gray, dark red toward surfaces; few tiny white inclusions; ffl.	Pl. 78	II.2.8
30:2	very dark grayish brown; very tiny white inclusions; ffl.	Pl. 78	II.2.10
30:3	dark buff; few tiny white inclusions; ffl.	Pl. 78	II.4.11
30:4	light buff, creamy toward surfaces; few tiny to medium white and tiny to medium dark brown inclusions; medium levigation; decorated with dark red painted bands and zigzags on the inside.		II.2
30:5	light brown, orange tan toward surfaces; few tiny to medium white and tiny to medium dark brown inclusions; ffl; decorated with dark red paint on the outside.		II.2
30:6	orange tan, creamy surfaces; few tiny to medium white and tiny to medium dark brown inclusions; ml; decorated with dark red painting on the exterior.		II.2

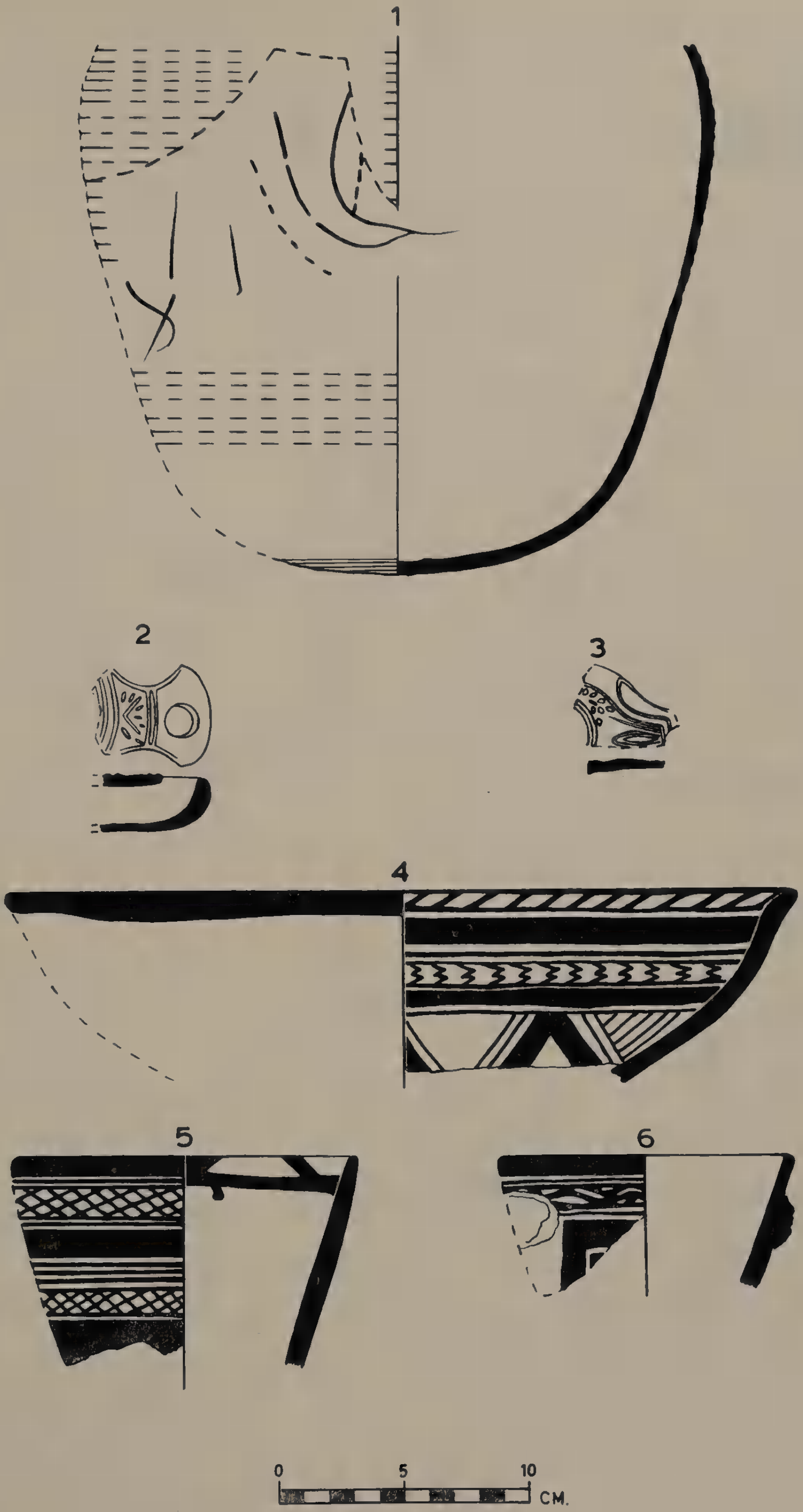


Plate 30. Second Revolt and Mamluk Pottery from Cave II.

Plate 31

	Description	*No.*	*Photograph*	*Locus*
31:1	Wooden bowl	4	Pl. 97a	I.3.2
31:2	Wooden bowl	78	Pl. 97a	I.3.2
31:3	Wooden bowl	10	Pl. 97a	I.2.2
31:4	Wooden bowl	79	Pl. 97a	II.4
31:5	Wooden bowl	23	Pl. 97a	II.2.4
31:6	Wooden bowl	80		II.4
31:7	Wooden bowl	5	Pl. 97a	I.3.2
31:8	Wooden lid	2	Pl. 97a	II.1.1
31:9	Unidentified bone	81	Pl. 97a	I.3

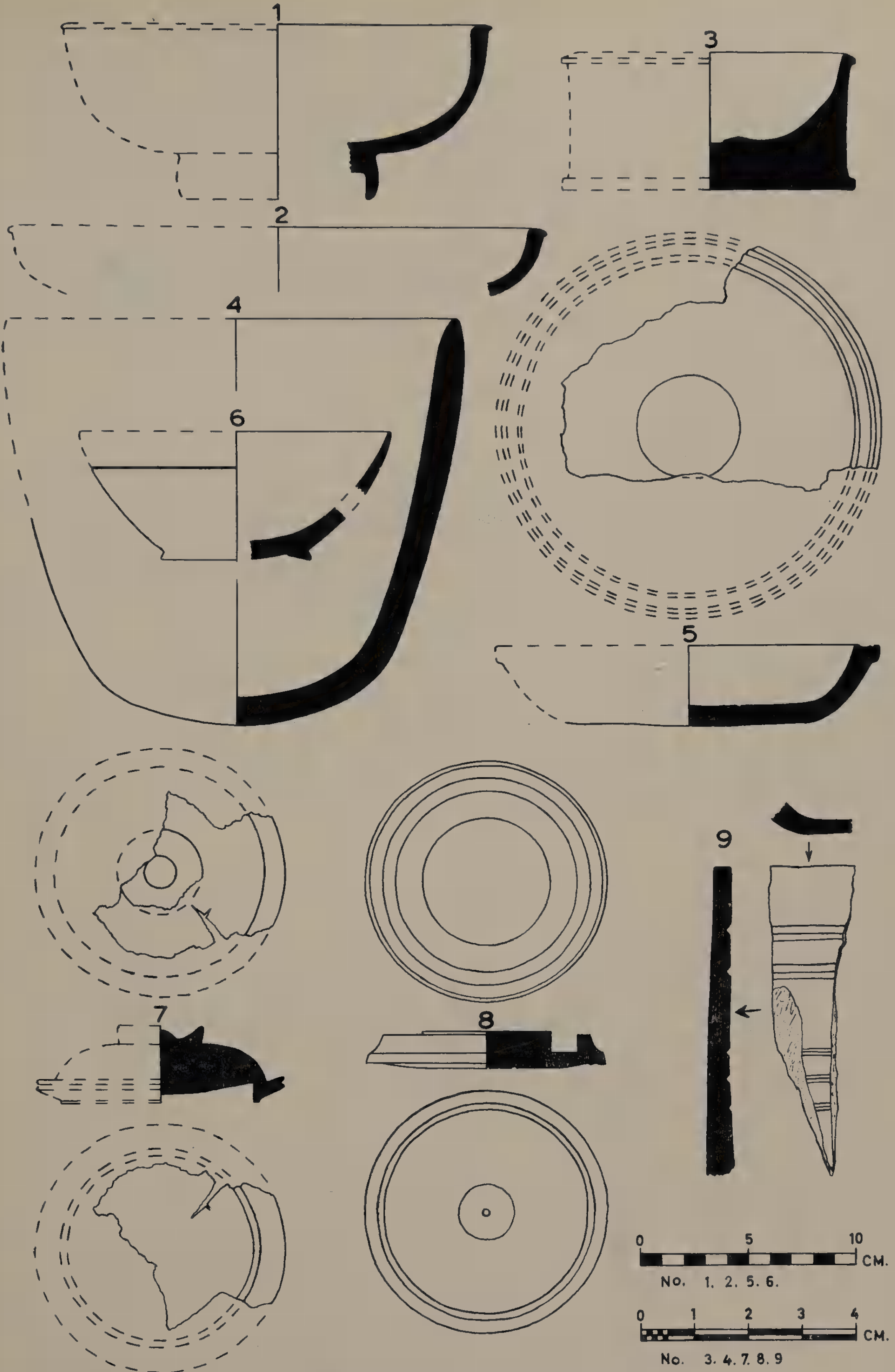


PLATE 31. Wooden and Bone Objects.

Plate 32

	Description	*No.*	*Photograph*	*Locus*
32:1	Wooden comb	3	Pl. 97b	II.1.1
32:2	Wooden comb	6	Pl. 97b	I.3.2
32:3	Wooden comb	53	Pl. 97b	I.8
32:4	Knife blade and handle	82	Pl. 97b	II.4.1

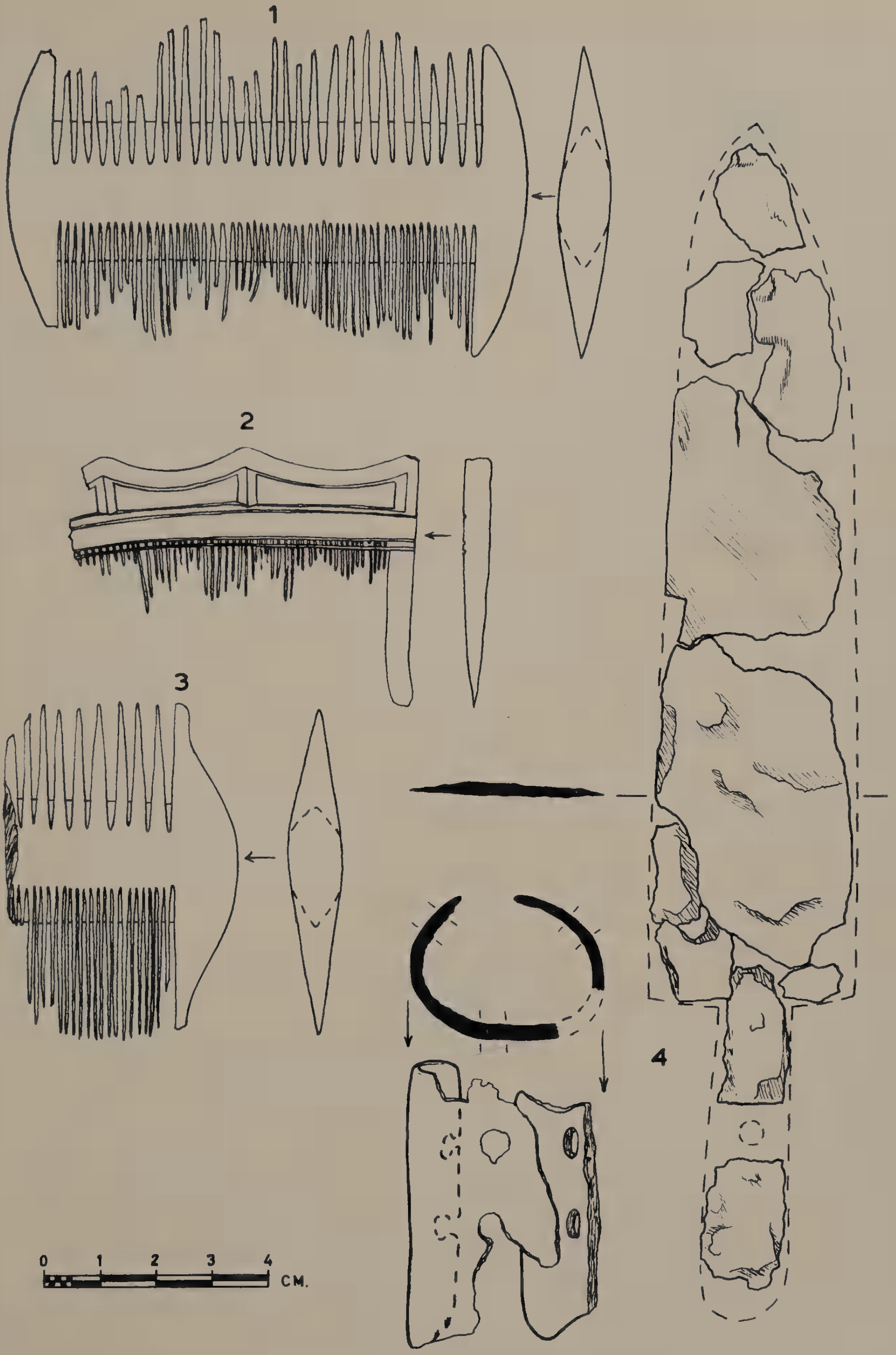


Plate 32. Wooden Combs and Knife Blade and Handle.

PLATE 33

	Description	*No.*	*Photograph*	*Locus*
33:1	Wooden handle	83	Pl. 98a	II.4.1
33:2	Wooden handle	71	Pl. 98a	II.4.1
33:3	Wooden handle	74	Pl. 98a	II.4.1
33:4	Wooden handle	72	Pl. 98a	II.4.1

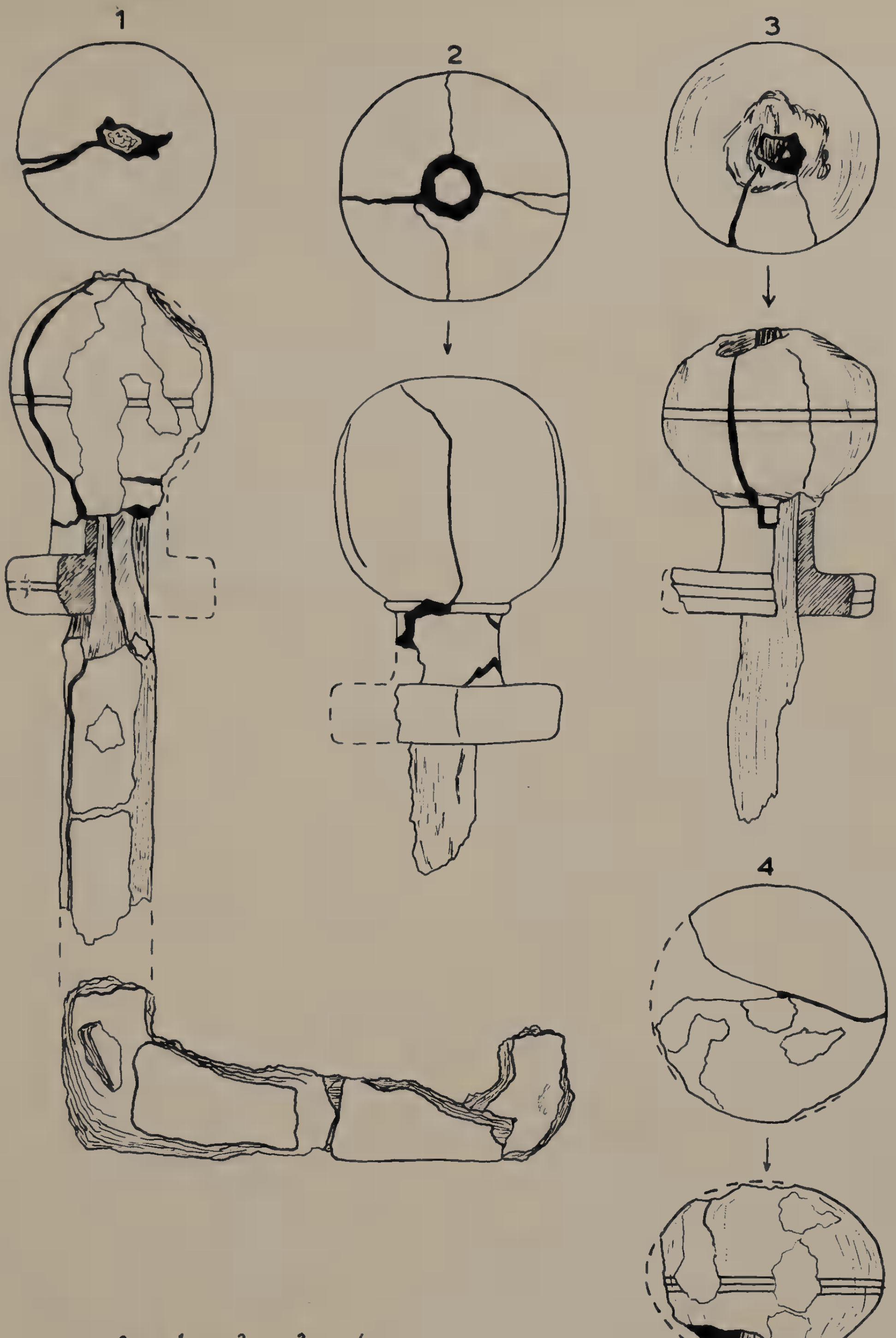


PLATE 33. Wooden Handles from Cave II, Room 4.

Plate 34

	Description	*No.*	*Photograph*	*Locus*
34:1	Wooden handle	70	Pl. 98b	II.4.1
34:2	Wooden handle	69	Pl. 98b	II.4.1
34:3	Wooden handle	68	Pl. 98b	II.4.1
34:4	Wooden handle	84	Pl. 98b	II.4.1

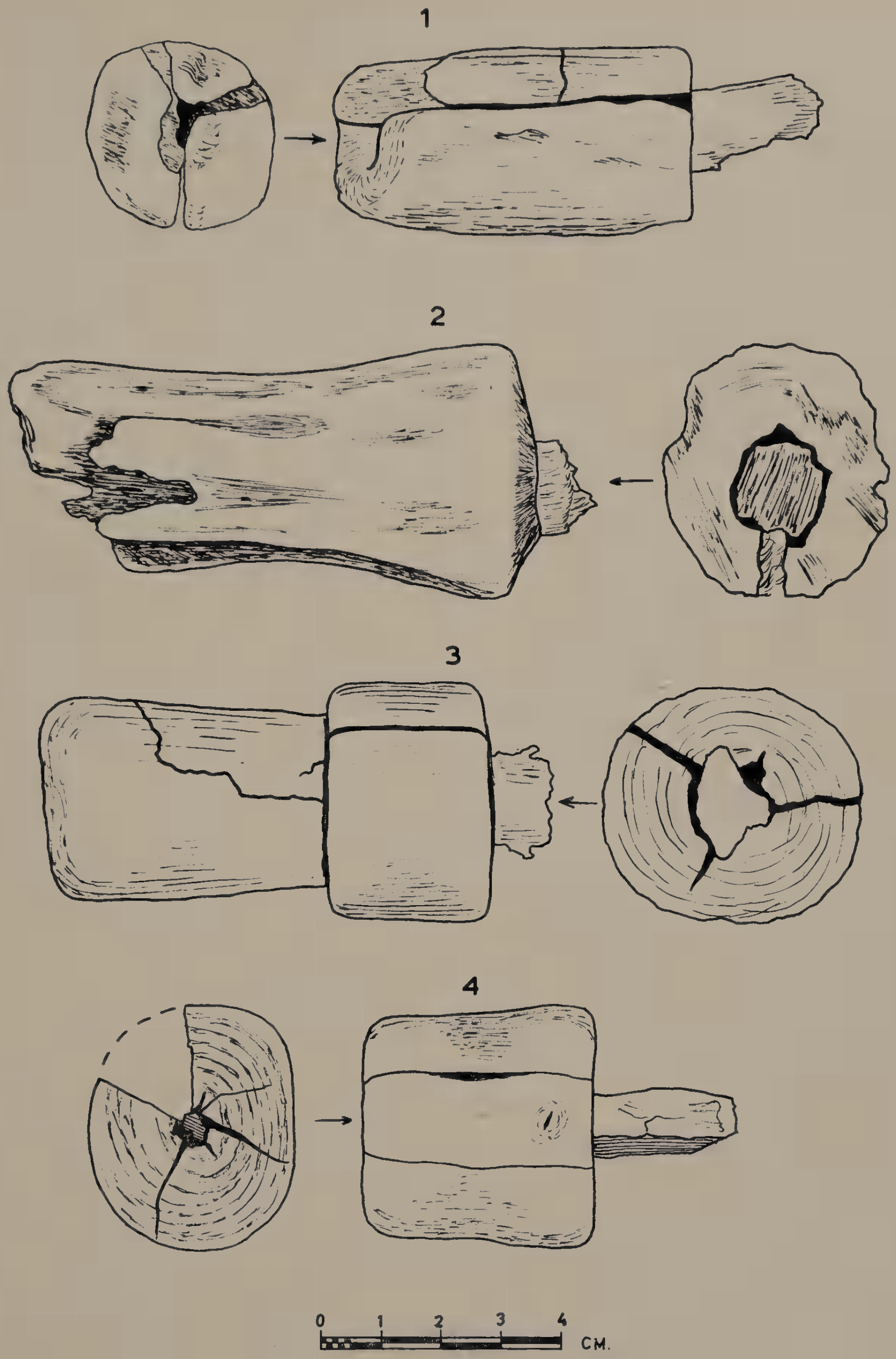


PLATE 34. Wooden Handles from Cave II, Room 4.

PLATE 35

	Description	*No.*	*Photograph*	*Locus*
35	Bronze jug handle	73	Pl. 99	II.4.1

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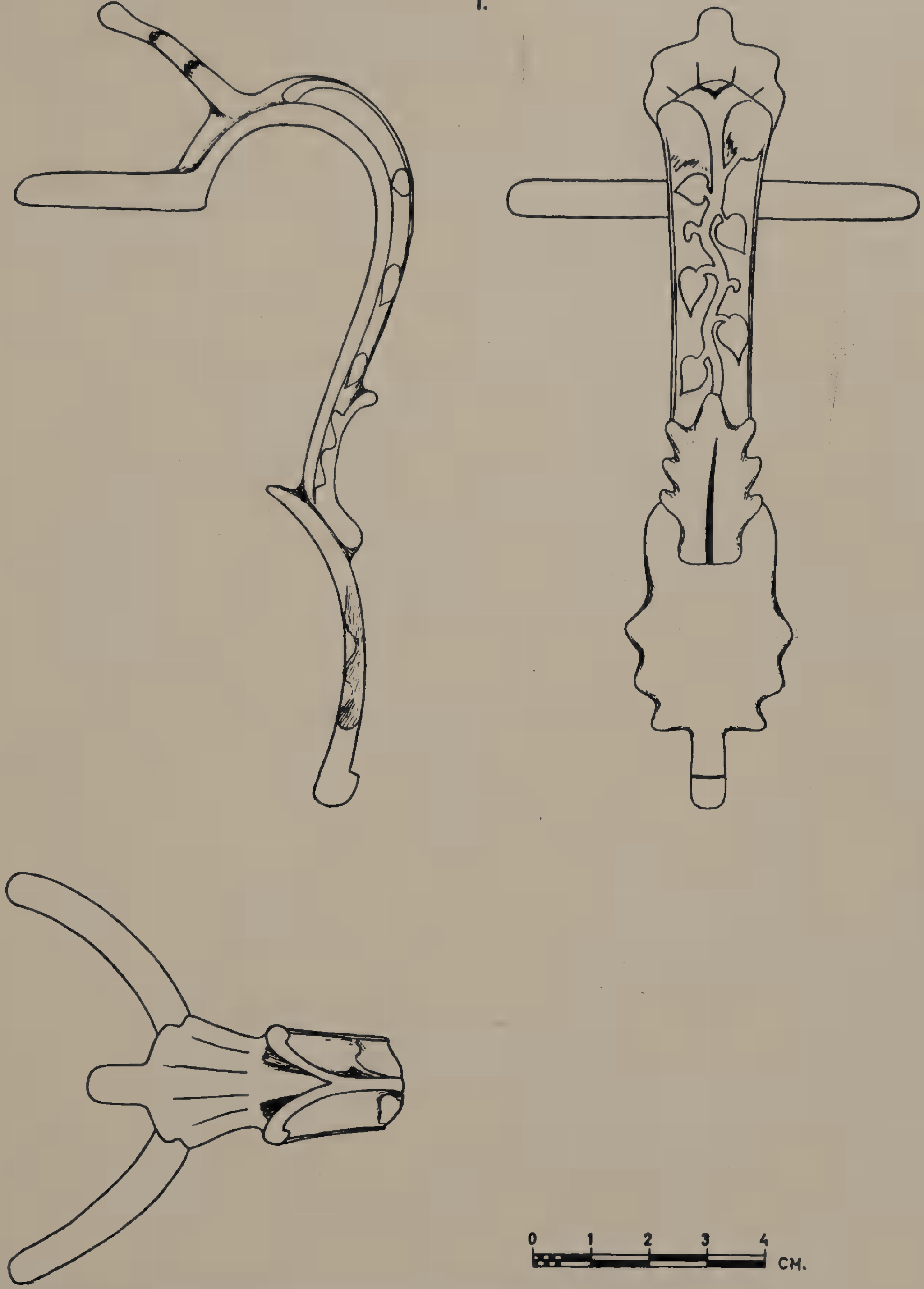

PLATE 35. Bronze Jug Handle from Cave II, Room 4.

Plate 36

	Description	*No.*	*Photograph*	*Locus*
36:1	Clay sealing	42	Pl. 100a	I.3.2
36:2	Clay sealing	43	Pl. 100a	I.3.2
36:3	Clay sealing	13	Pl. 100a	I.8.2
36:4	Clay sealing	22	Pls. 100a, 62	I.3.2
36:5	Bronze earring	54	Pl. 100a	I.8
36:6	Bronze earring	58	Pl. 100a	I.8
36:7	Horseshoe	9	Pl. 100a	I.2.2
36:8	Toggle pin	44	Pl. 100a	I.3.2
36:9	Silver earring	44	Pl. 100a	I.3.2
36:10	Coin	91	Pl. 100a	I.8
36:11	Scarab	11	Pl. 100a	I.3.2

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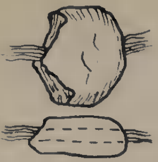

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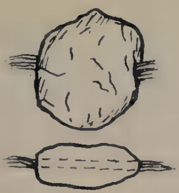

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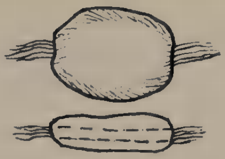

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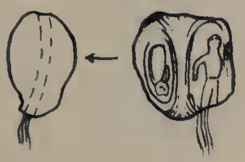

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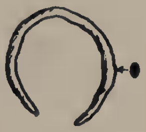

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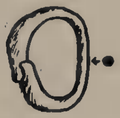

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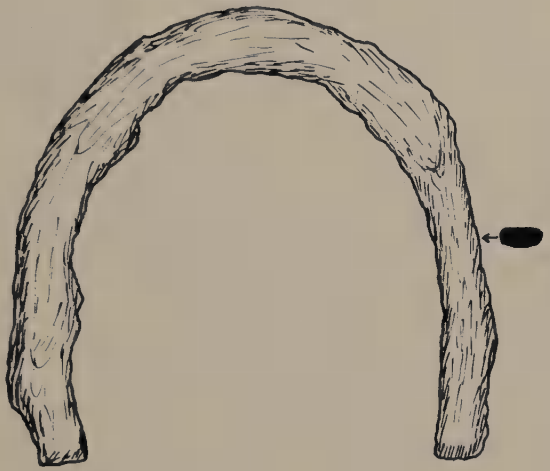

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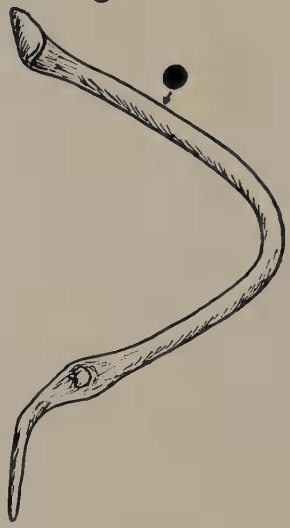

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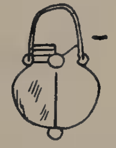

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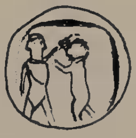

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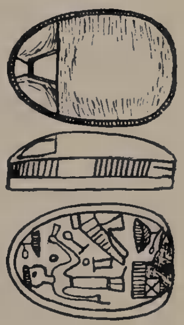
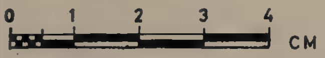
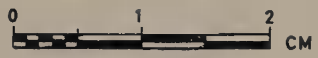




NO. 1–9



NO. 10 – 11

Plate 36. Objects from Cave I.

PLATE 37

	Description	*No.*	*Photograph*	*Locus*
37:1	Marked sherd	85	Pl. 100b	II.2.9
37:2	Marked sherd	86	Pl. 100b	II.7
37:3	Kohl stick	66	Pl. 100b	II.2. tr 1
37:4	Pin	65	Pl. 100b	II.2.10
37:5	Iron pike or javelin head	77	Pl. 100b	II.4.16
37:6	Metal fragments	87	Pl. 100b	II.2.10
37:7	Metal fragment	88	Pl. 100b	II.2.10
37:8	Metal fragment	89	Pl. 100b	II.2.10
37:9	Second Revolt coin	90	Pls. 100b, 101a	II.2.10

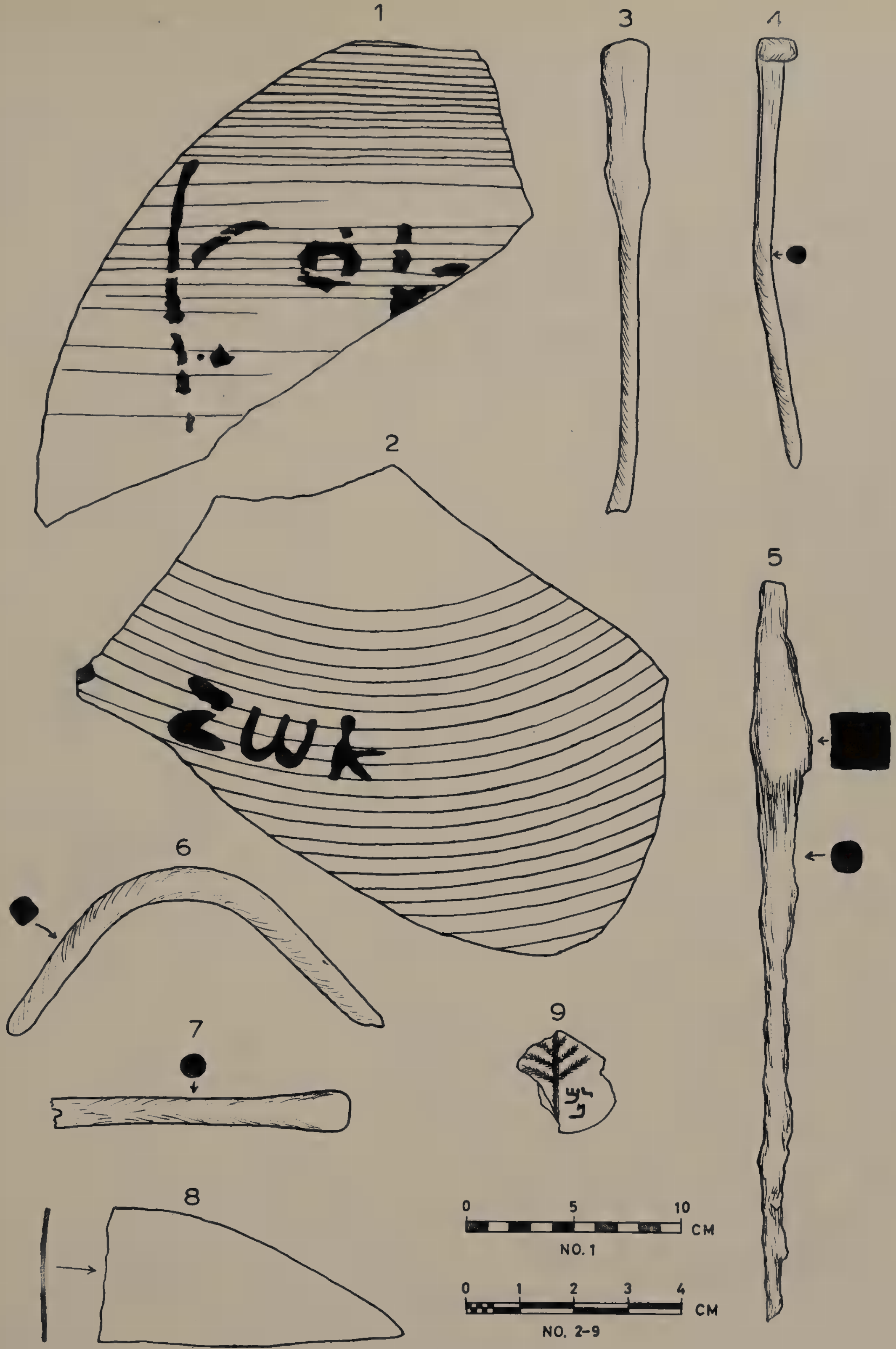


Plate 37. Objects from Cave II.

PLATE 38

	Description	*No.*	*Photograph*	*Locus*
38:1	One-handled jug			II.4.21
38:2	Bottle			II.2.6
38:3	Flask (?)			II.2. tr 1
38:4	Modiolus			II.2.4
38:5	Unguentarium			II.2.9
38:6	Unguentarium			II.4.19
38:7	Shallow bowl or bottle (?)			

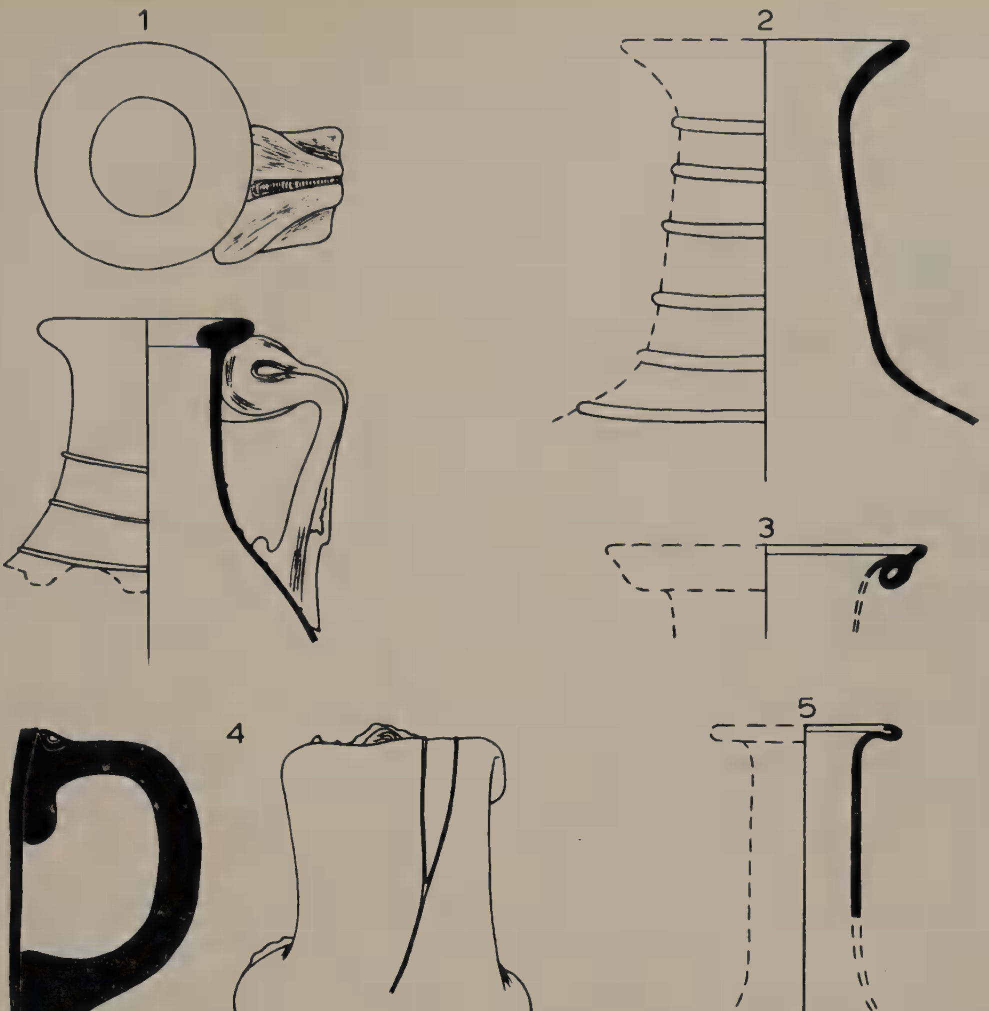


Plate 38. Roman Glass from Cave II.

PLATE 39

	Description	*No.*	*Photograph*	*Locus*
39:1	Bowl or cup (?)			II.2.10
39:2	Bowl or cup			II.2.4
39:3	Plate			II.2.9
39:4	Bowl			II.4.16
39:5	Bowl			II.4
39:6	Deep bowl			II.2.4
39:7	Bowl or cup			II.4.8
39:8	Bottle (?)			II.2.4
39:9	Bowl or plate			II.2.6
39:10	Bowl			II.4
39:11	Bottle			II.2.7
39:12	Bowl (?)			I

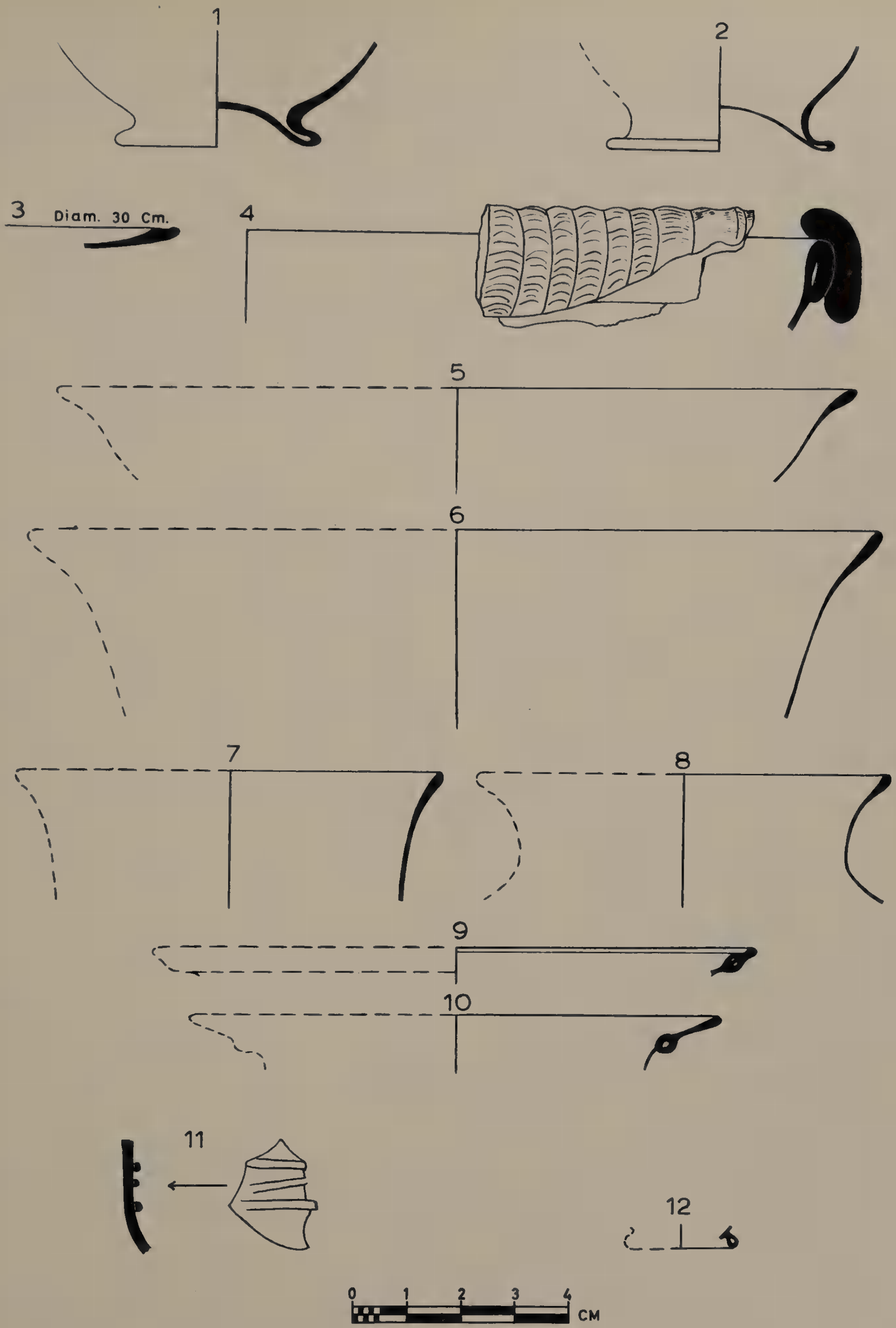


PLATE 39. Roman Glass from Cave II.

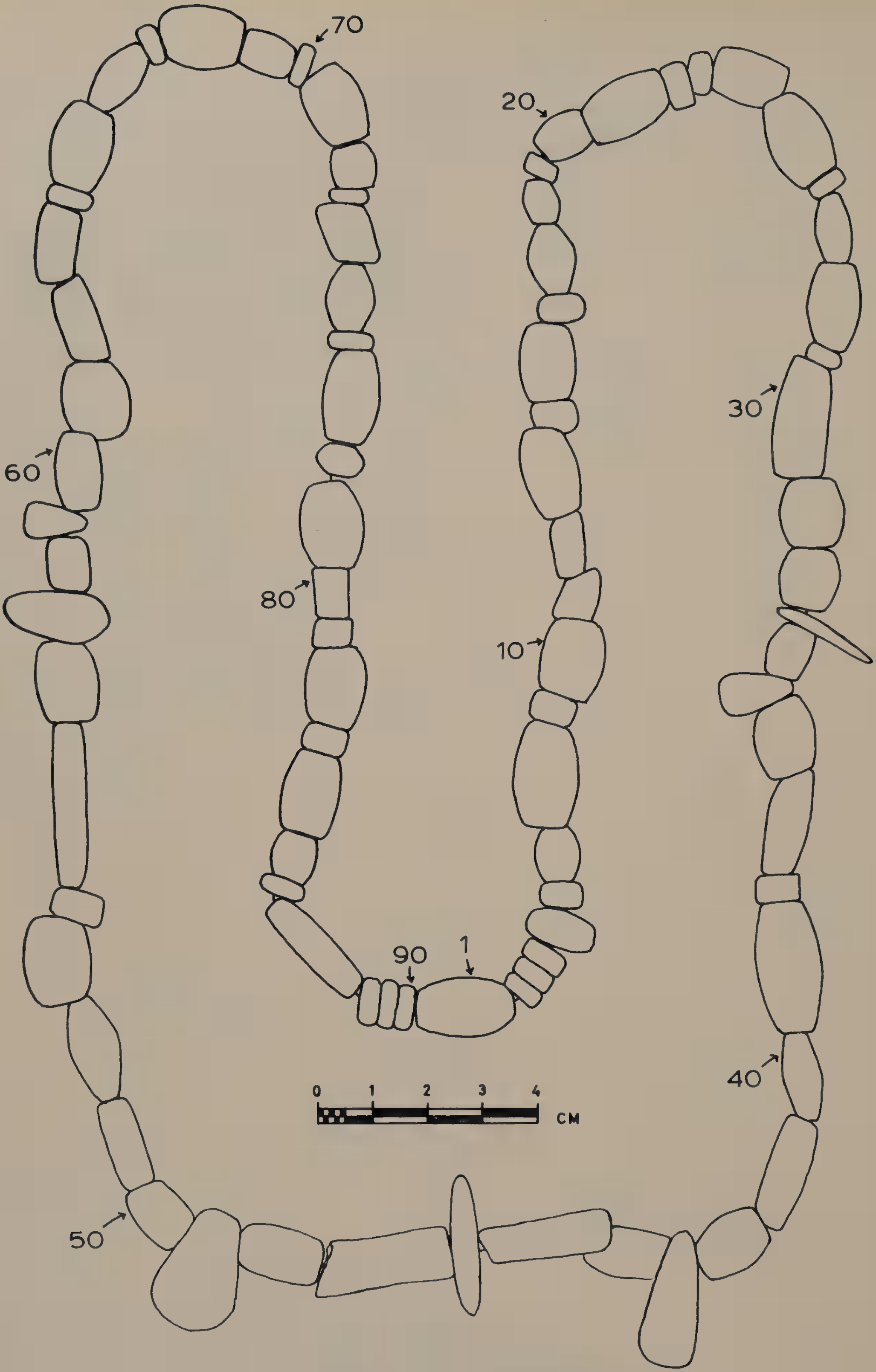


Plate 40. Beads from Cave II, Room 4.
See photograph Pl. 101: b.

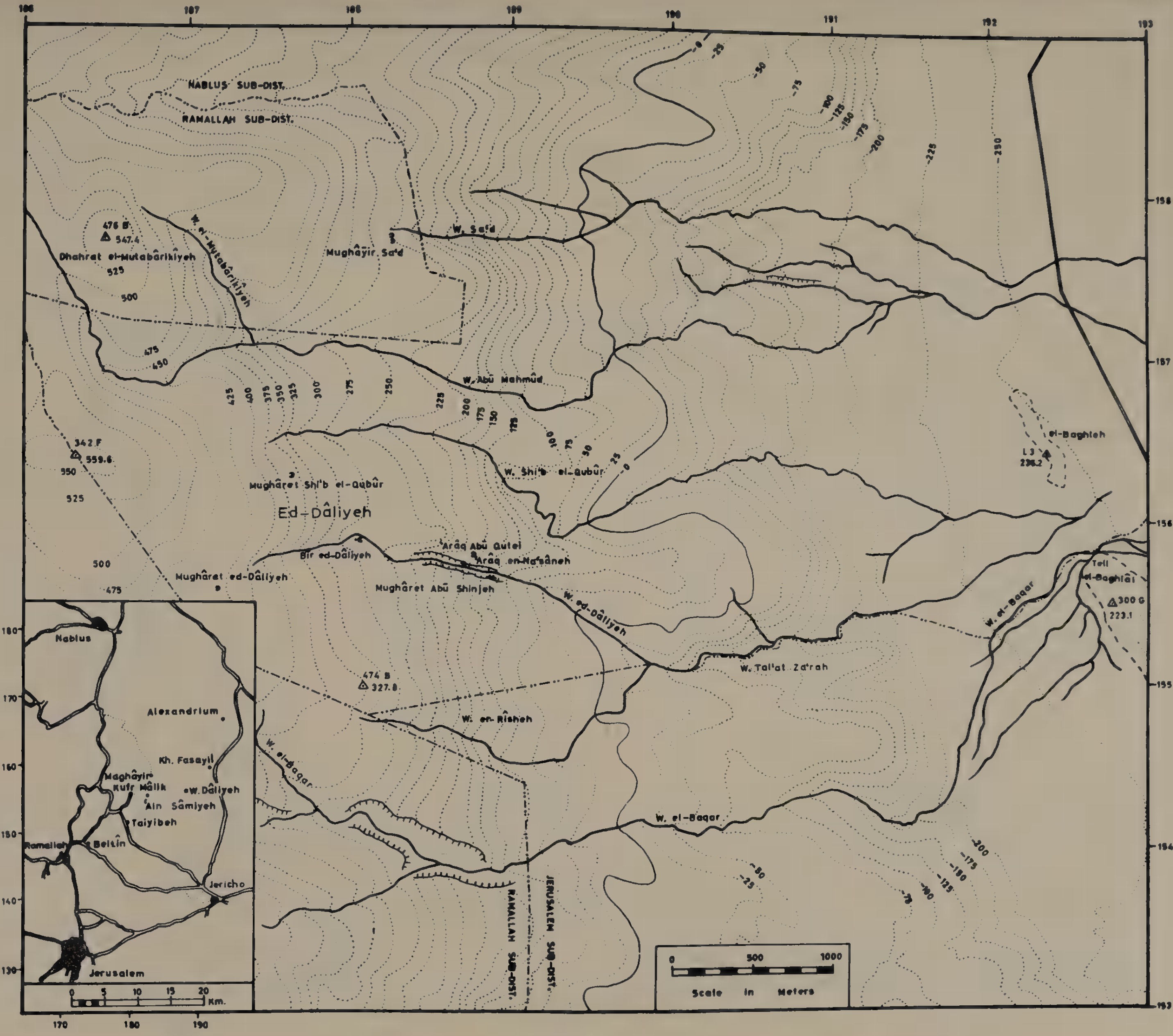


PLATE 41. Contour Map of the Wâdī ed-Dâliyeh district with Sub-District boundaries.

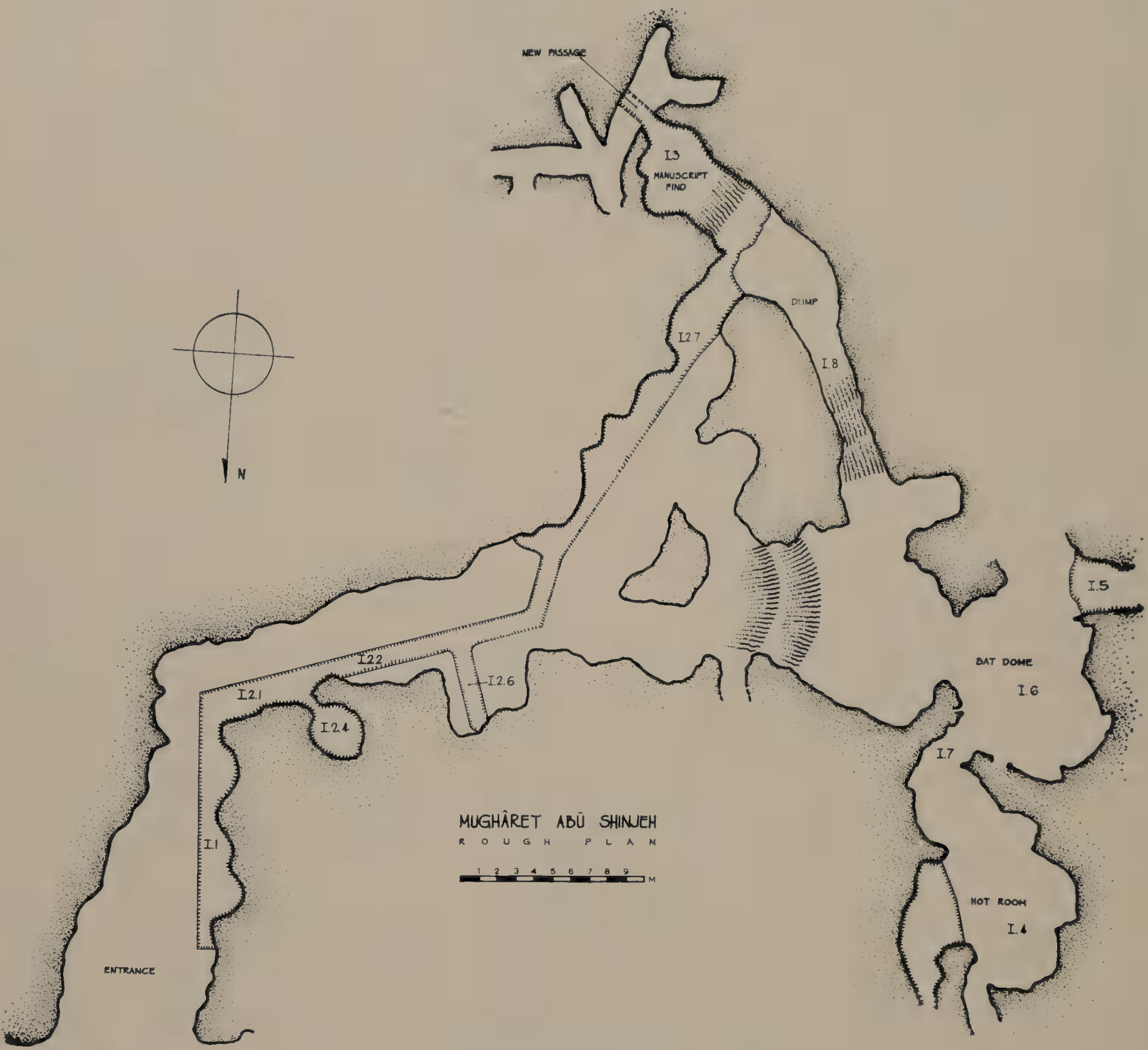


Plate 42. Rough plan of Mughâret Abū Shinjeh, Cave I.

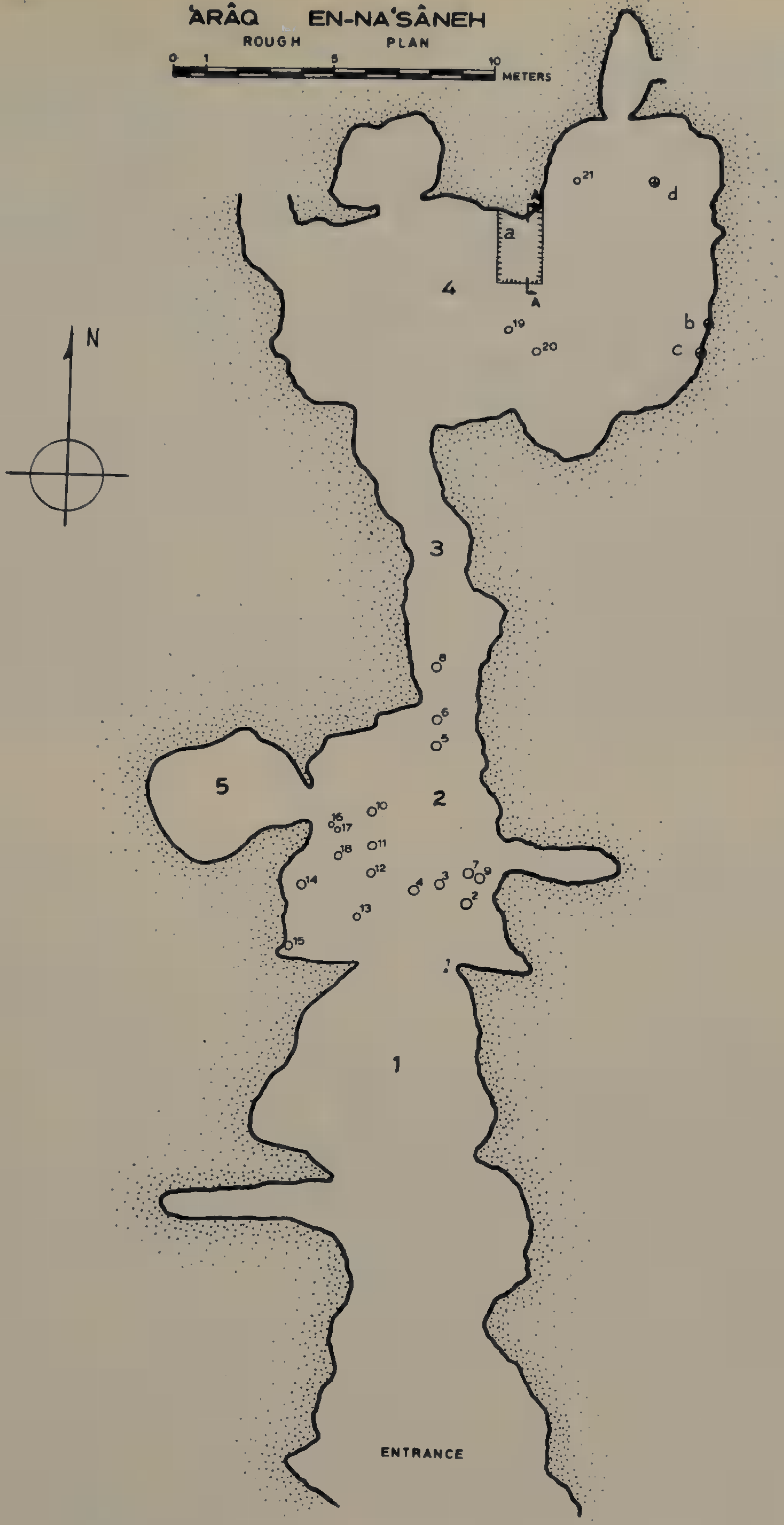


Plate 43. Rough plan of ʿArâq en-Naʿsâneh, Cave II.

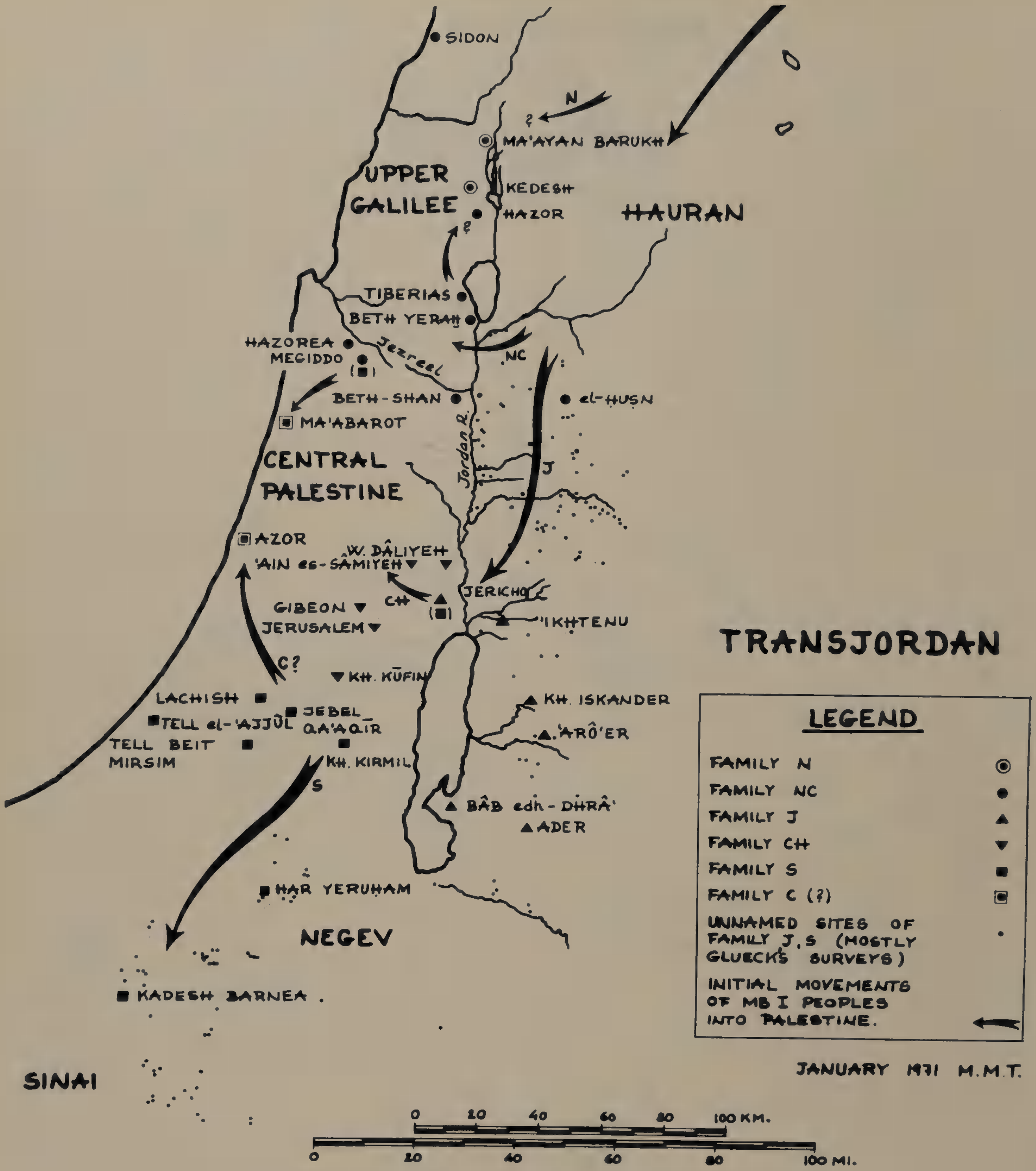


PLATE 44. The MB I Peoples of Palestine as described in Chapter V.

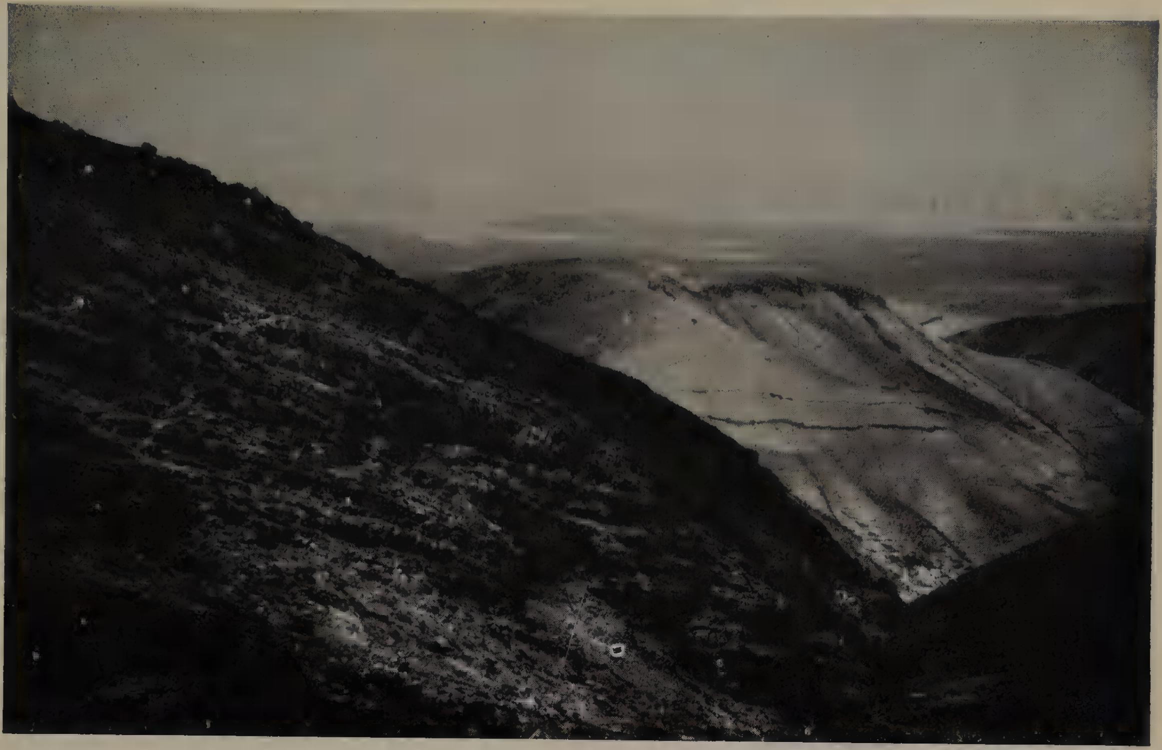


Plate 45a. Looking down the Wâdī ed-Dâliyeh to the east toward the Dead Sea and Transjordan.

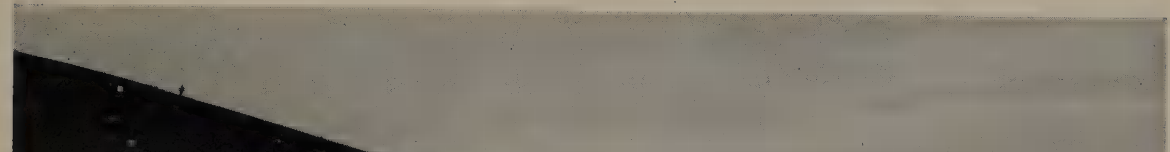


Plate 45b. Over the trackless waste west of Fasâyil toward the Wâdī ed-Dâliyeh caves.

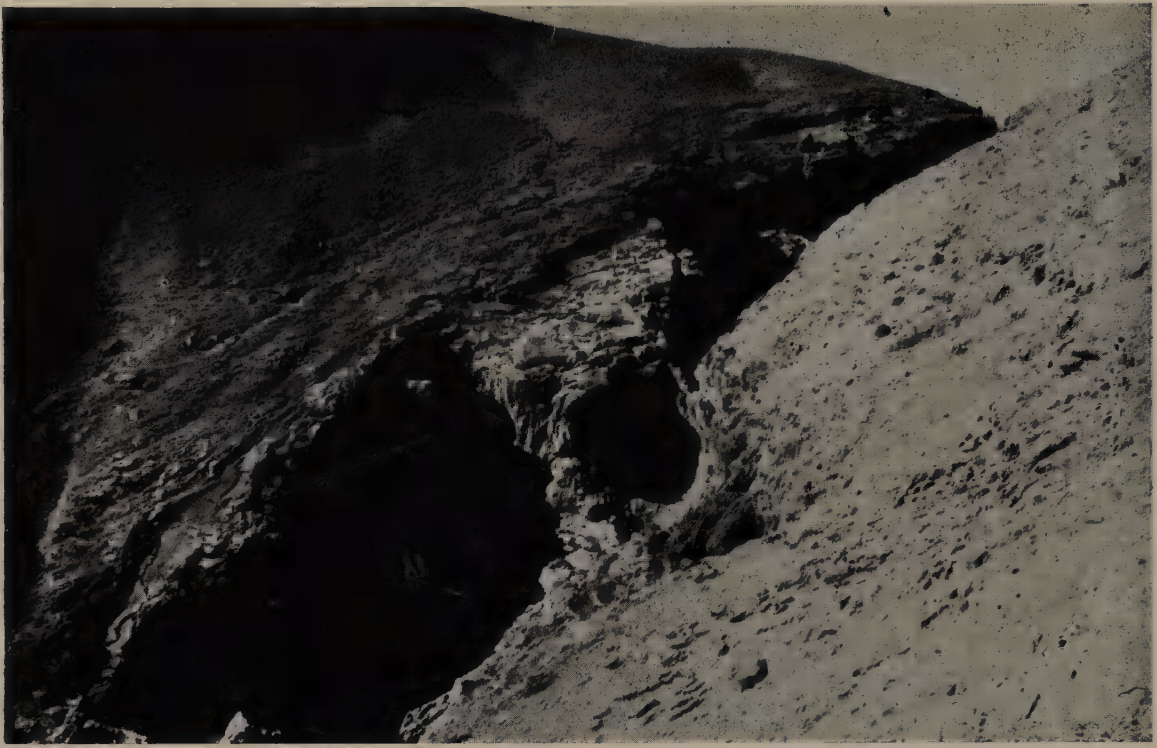


PLATE 46a. Looking west up the Wâdī ed-Dâliyeh defile.

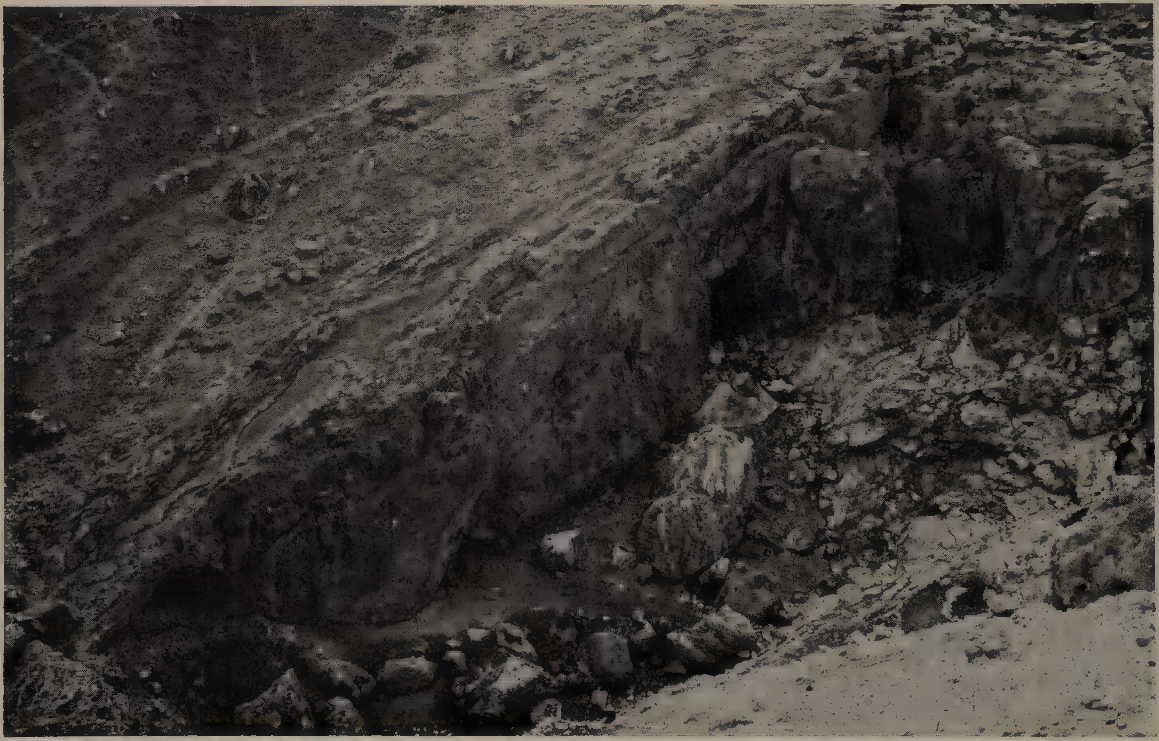


PLATE 46b. Mughâret Abū Shinjeh (Cave I) in the Wâdī ed-Dâliyeh, to the right.

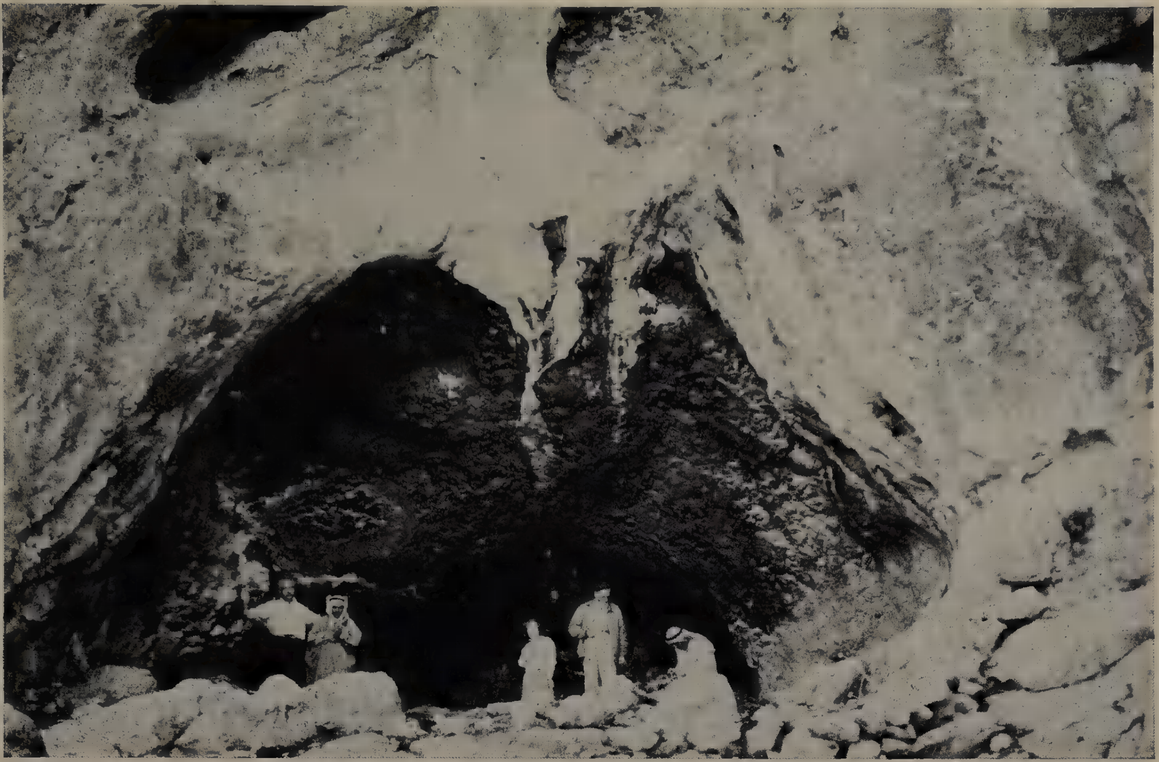


Plate 47a. The entrance of Cave I, Mughâret Abū Shinjeh.

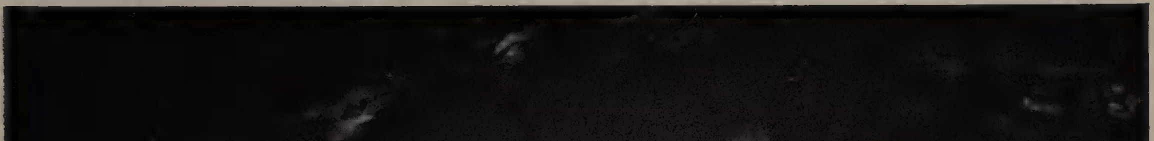


Plate 47b. Père R. de Vaux and Yusef Saad ready to enter the cave passageway.

Plate 48a. Loading up supplies for the camp in the wadi.

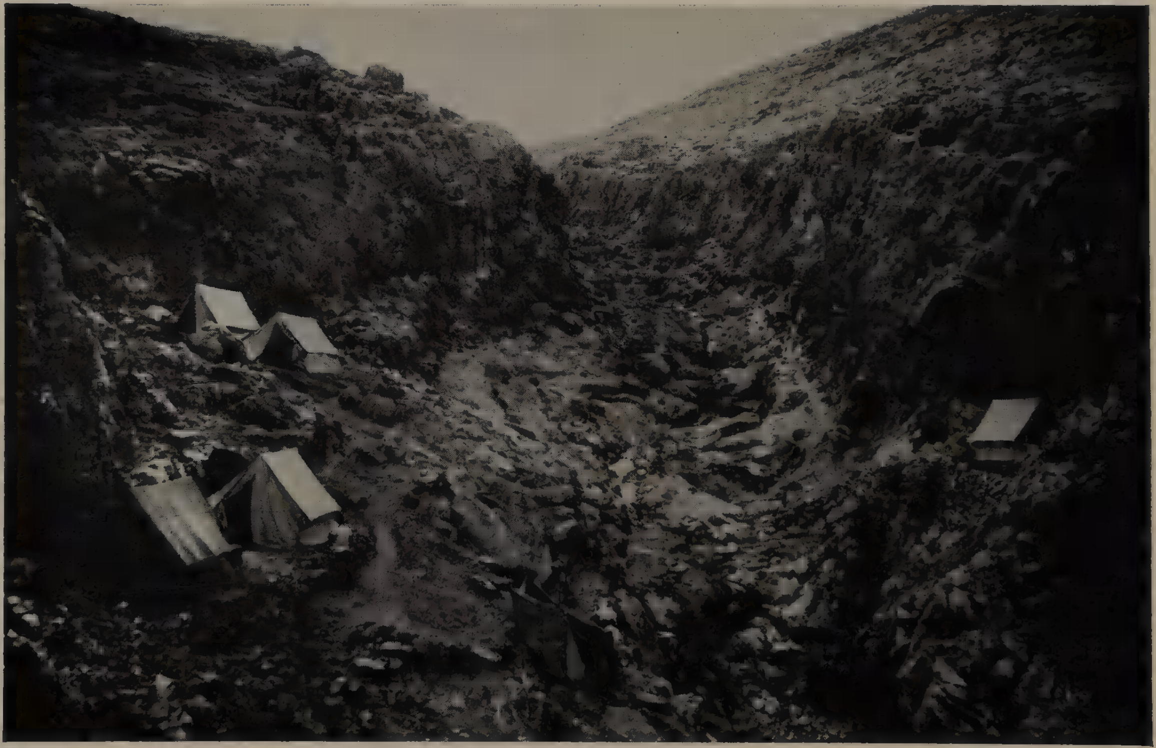


Plate 48b. The camp just above Mughâret Abū Shinjeh in the wadi. The tent on the right is the kitchen tent at the mouth of ʻArâq en-Naʻsâneh, Cave II.

PLATE 49a. The staff of the January 1963 sounding. Left to right: Willis Shotwell, Aboud Dhib Nasif, Alexander DiLella, Nasir Dhiab, Muhammed Adawi, Najua Husseini; in front: Sami Rashid.

PLATE 49b. The workers of the January 1963 sounding with Paul Lapp, Director, sixth from left in front.

Plate 50a. The workers scurry up the wadi for a day's work.

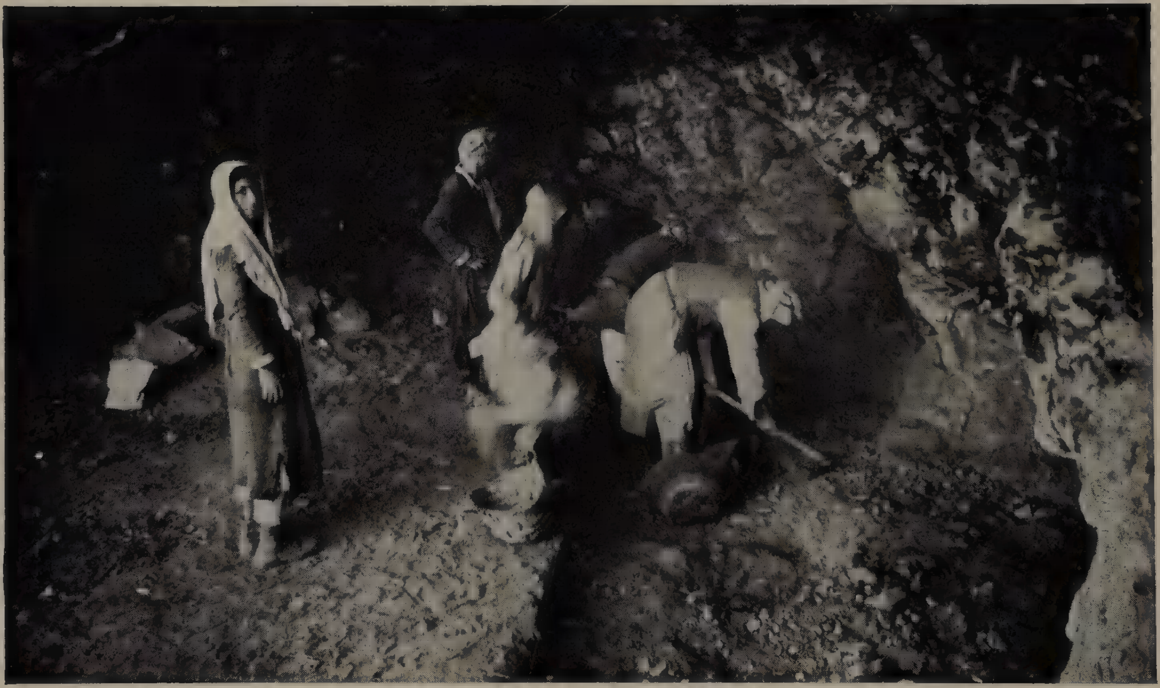


Plate 50b. Beginning the trench into the mouth of Cave I.

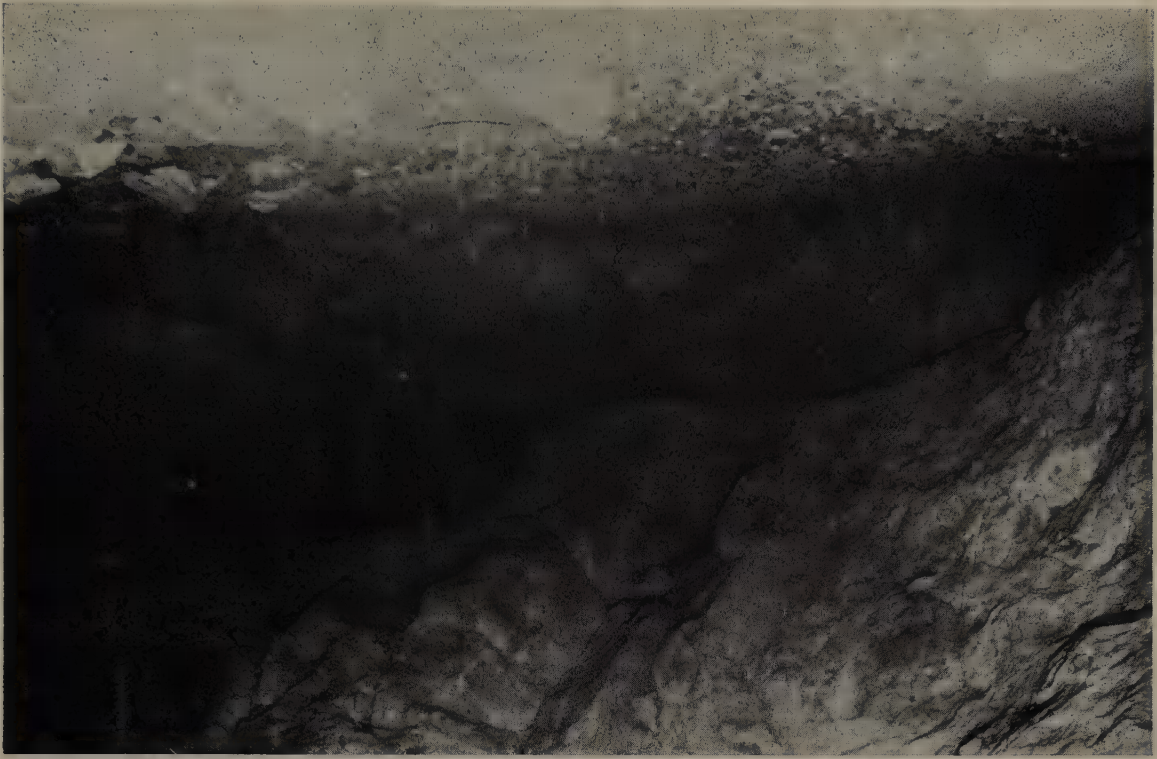


PLATE 51a. Opening off Cave I trench (I.2) just west of first bend (designated I.2.4).

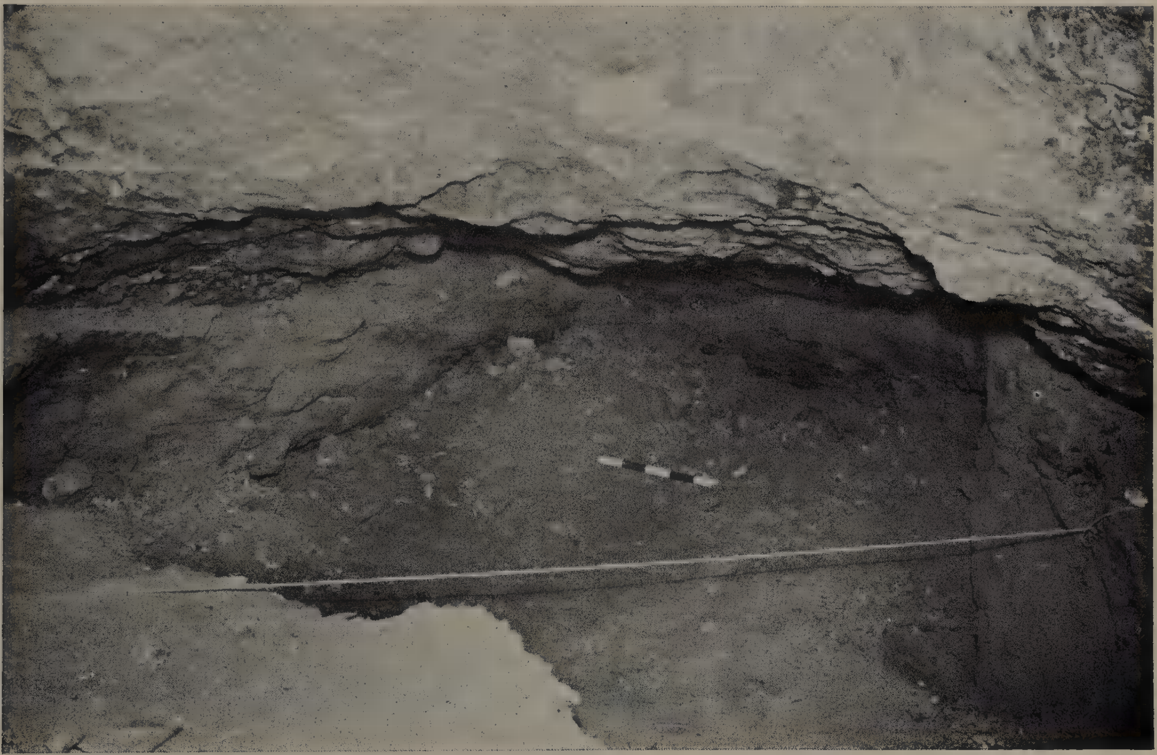


PLATE 51b. The area of Cave I where the manuscripts had been found (designated I.3).

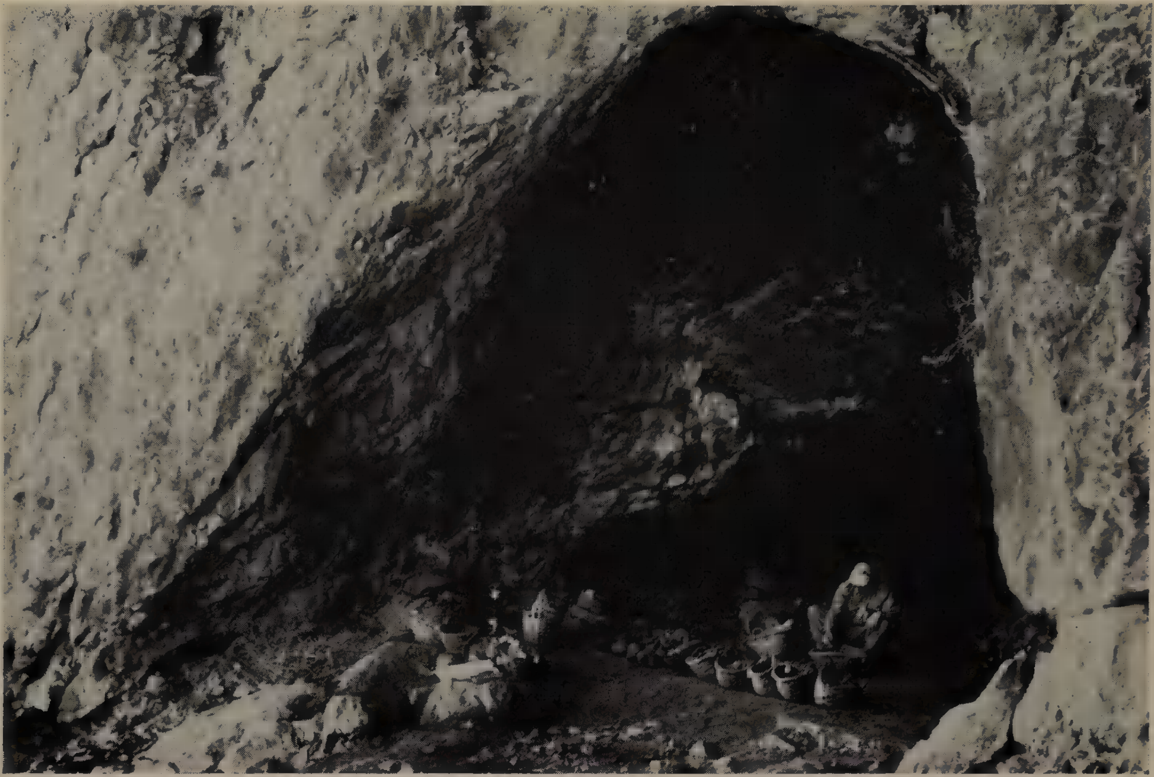


Plate 52a. Entrance to Cave I where pottery and bones were collected.

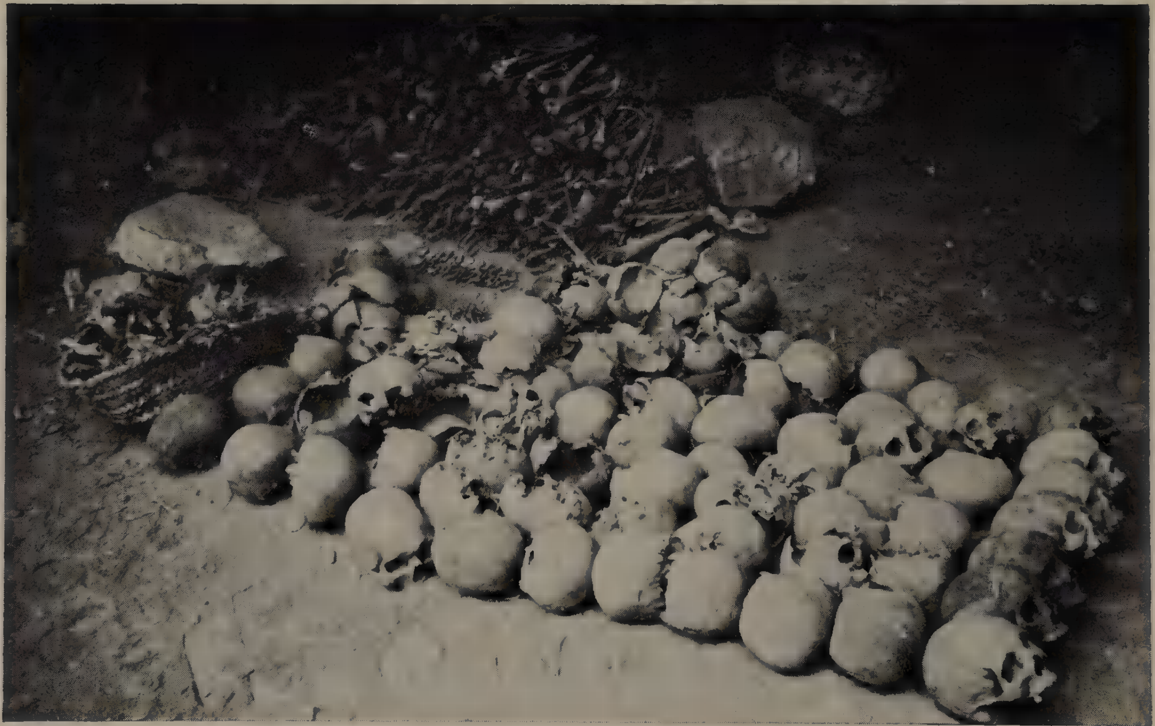


Plate 52b. Skulls and bones lined up at the mouth of the cave.

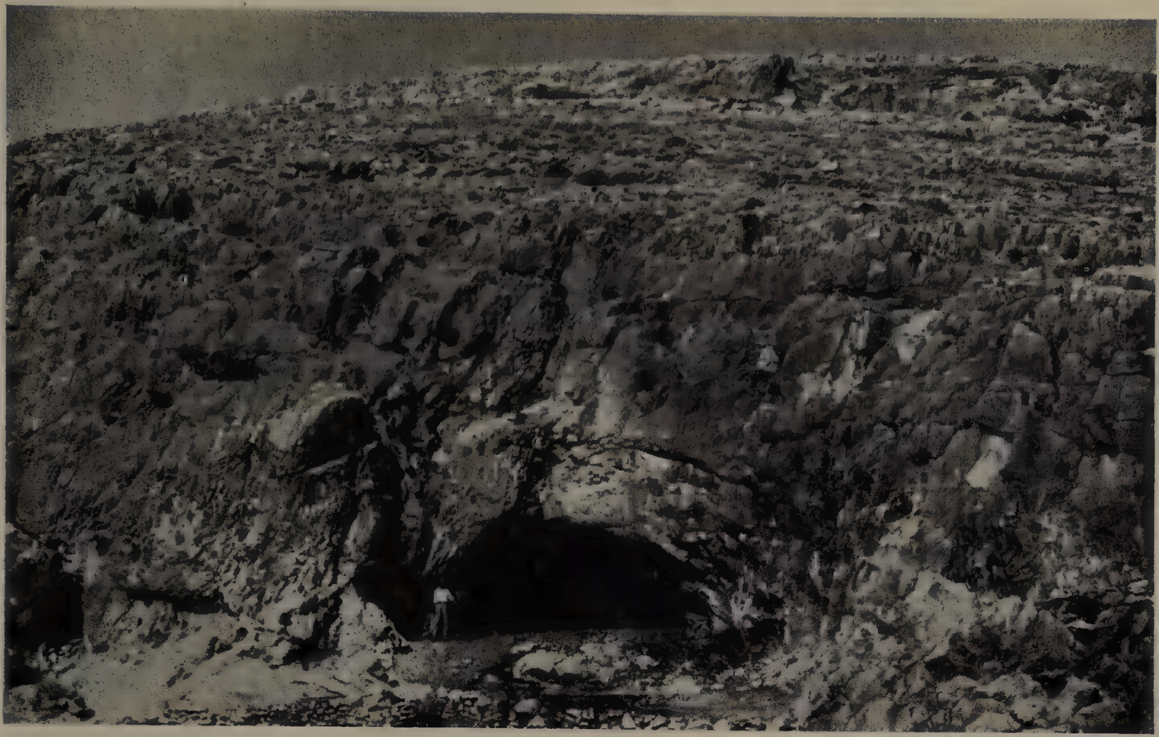


PLATE 53a. The entrance to ʻArâq en-Naʻsâneh, Cave II, slightly up the wadi from Cave I.

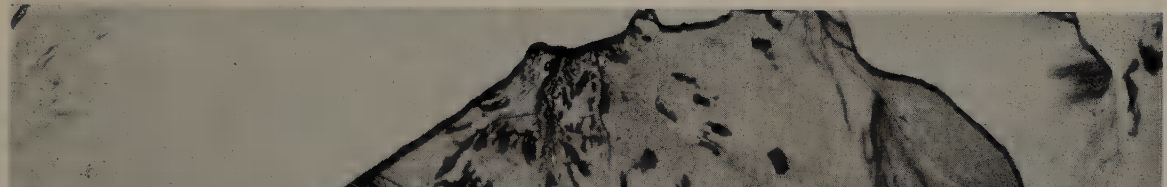


PLATE 53b. A scene inside showing some of the large rooms inside Cave II.

Plate 54a. The staff of the February, 1964, clearance. Left to right, standing: Muhammed Adawi, Muhammed Abu Ajamiyeh, John Holt, Muhammed Musa Awadh, Aboud Dhib Nasif; in friont: Nasir Dhiab Mansoor, Jabr Muhammed Hassan, George Nickelsburg.

Plate 54b. The workers of the February, 1964, clearance.

PLATE 55a. Further excavation in the manuscript area (I.3) near back where new opening appeared.

PLATE 55b. Crew at work in Cave I north of Bat Dome.

PLATE 56a. Work with aid of lights and masks in Cave I, Area 7.

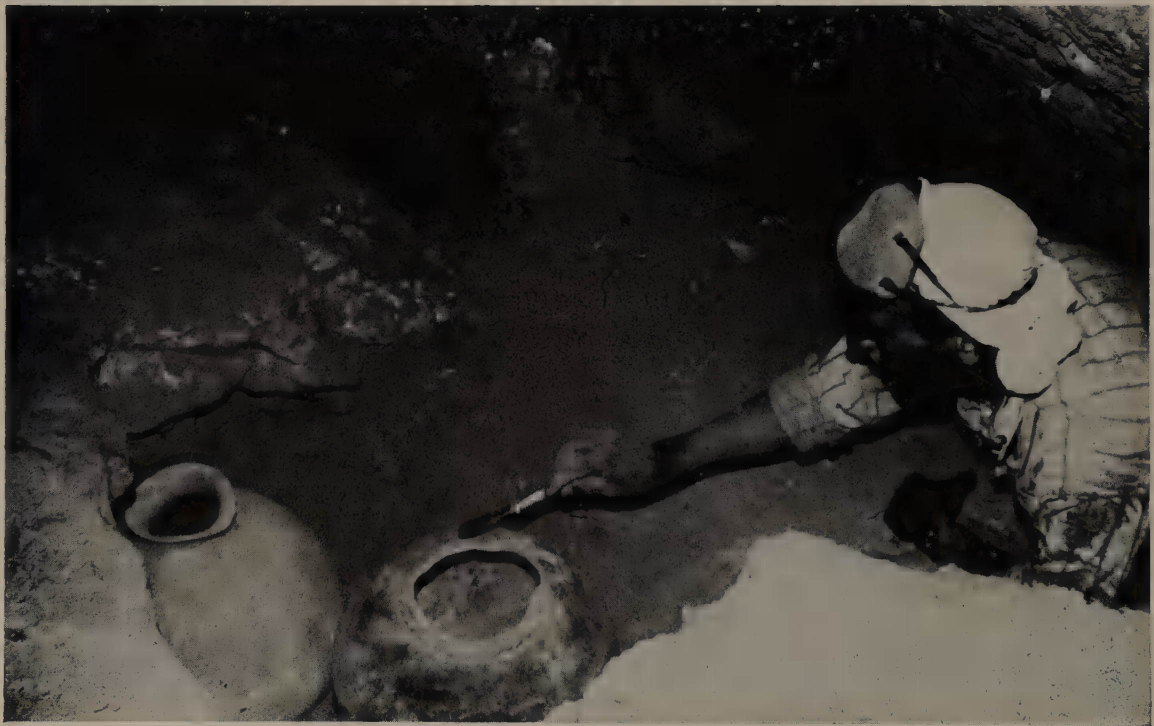


PLATE 56b. Two whole MB I pots discovered near entrance of II.5.

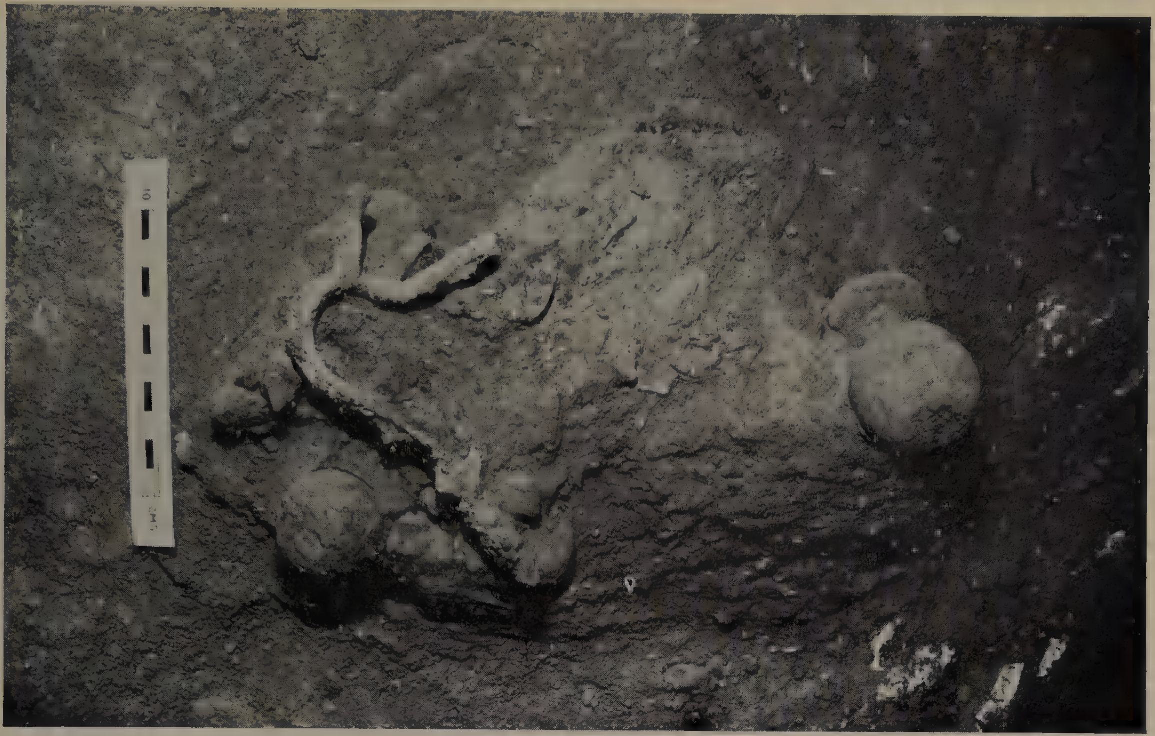


Plate 57a. Second Revolt hoard including iron knife, wooden handles, and bronze jug handle in Cave II, Room 4.

Plate 57b. Section in Room 4 of Cave II.

PLATE 58a. Sherds as discovered in II.5.

PLATE 58b. The Ta'âmireh entertain with dancing and music, a " dabkeh."

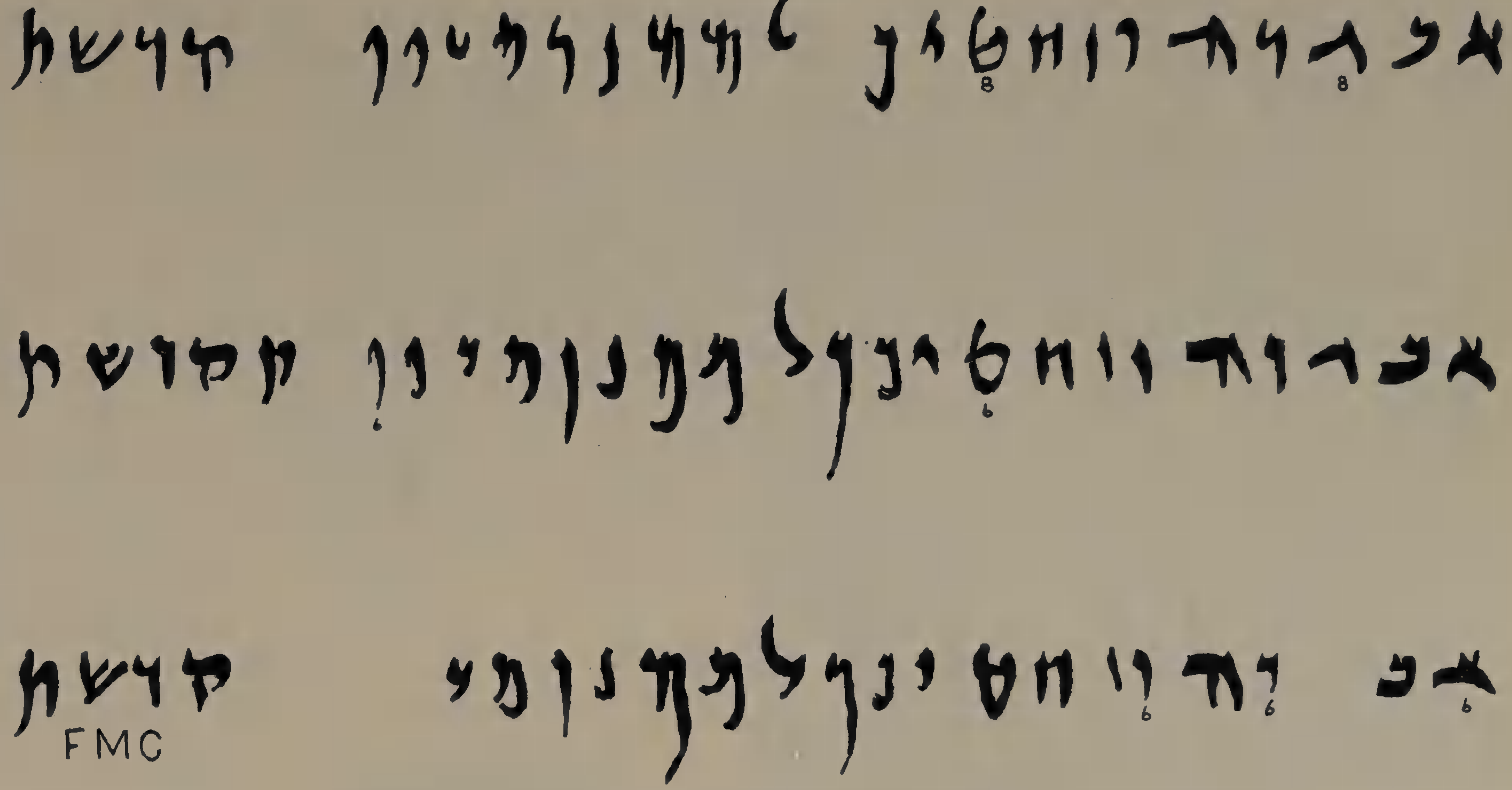
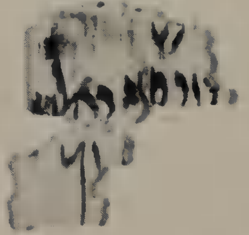
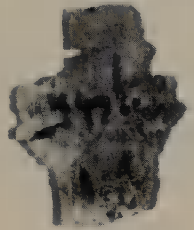


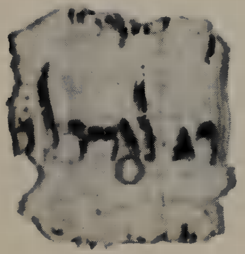
Plate 59. Chart of Scripts. Line 1: The elegant script of Papyrus II, dating from 352/1 B.C. (7th year of Artaxerxes III). The siglum *8* designates forms taken from the contemporary Papyrus 8 dated March 4, 354 B.C. Lines 2 and 3: Script of Papyrus I dated March 19, 335 B.C. The siglum *6* marks letter forms taken from the roughly contemporary Papyrus 6 (ca. 340 B.C.).



a. WD I.3 No. 27 and WD I.3 No. 28 (belong together).



b. WD I.3 No. 26.



c. WD I.3 No. 29.

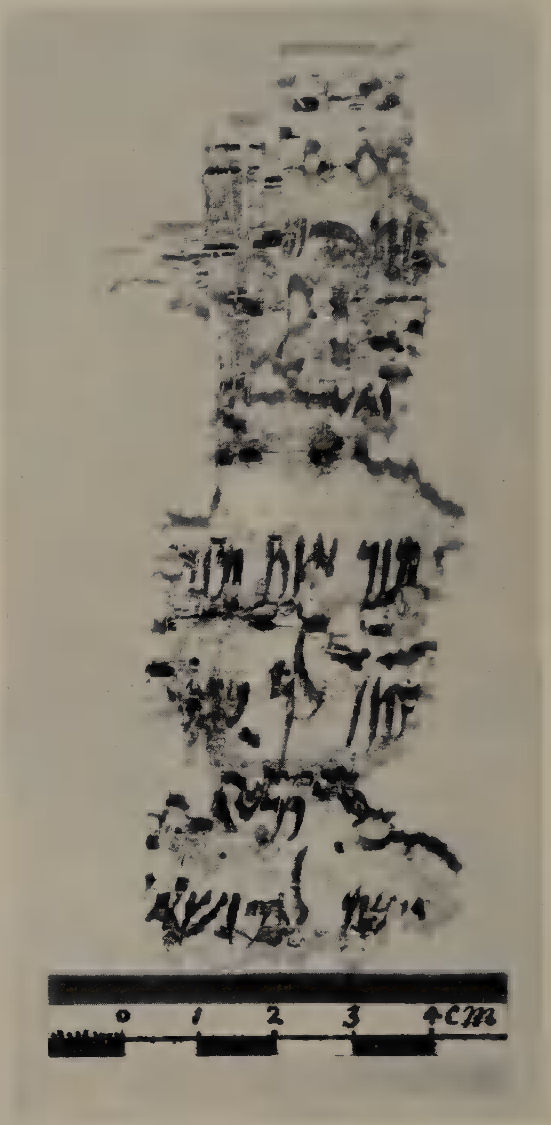


PLATE 60. Left: Small fragments of papyri found in the 1963 clearance in the Wâdī ed-Dâliyeh

Right: A large papyrus fragment from the 1964 campaign, WD I 3 No. 33. The document has to do with a loan.

Photographs courtesy of the Palestine Archaeological Museum.

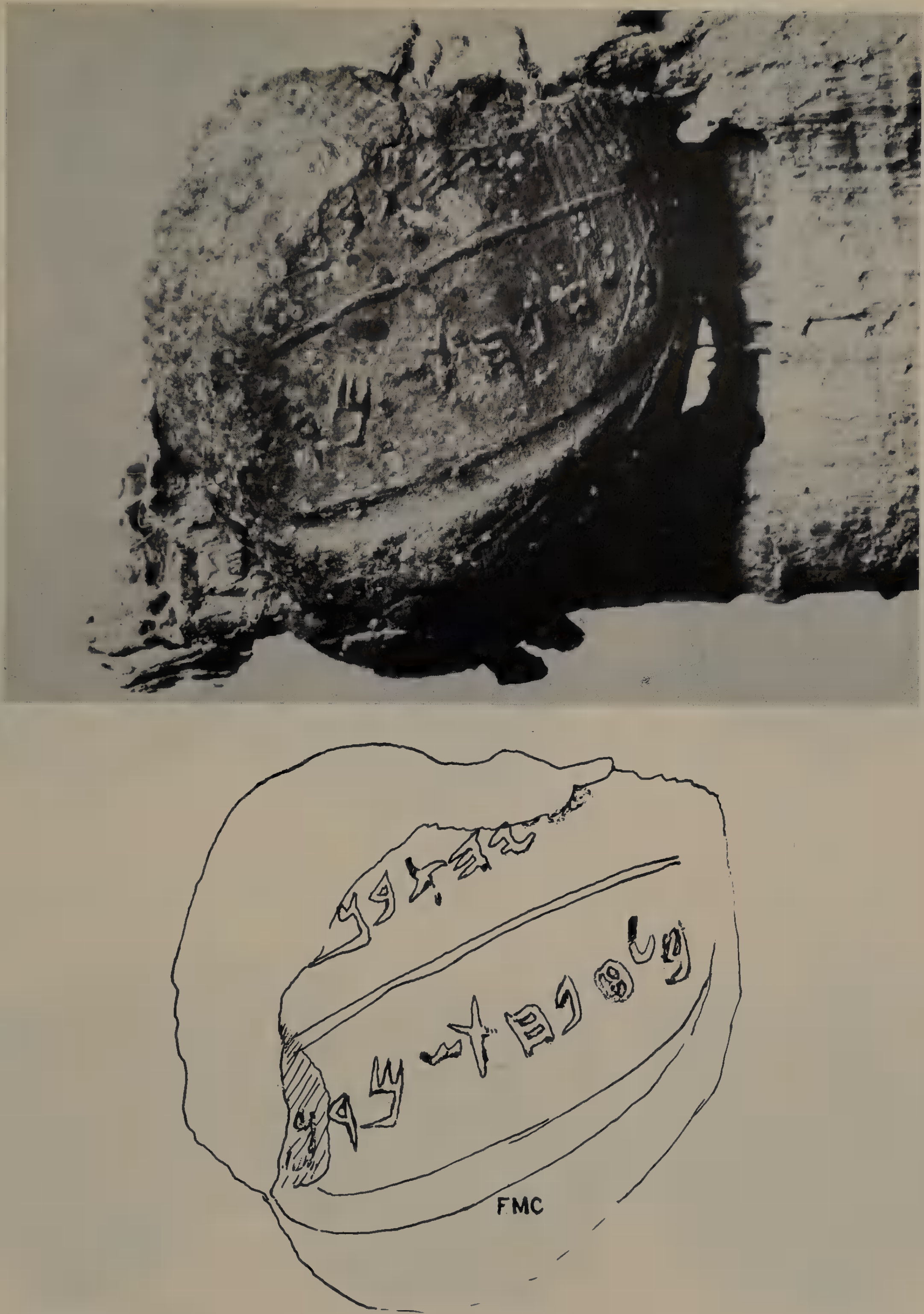
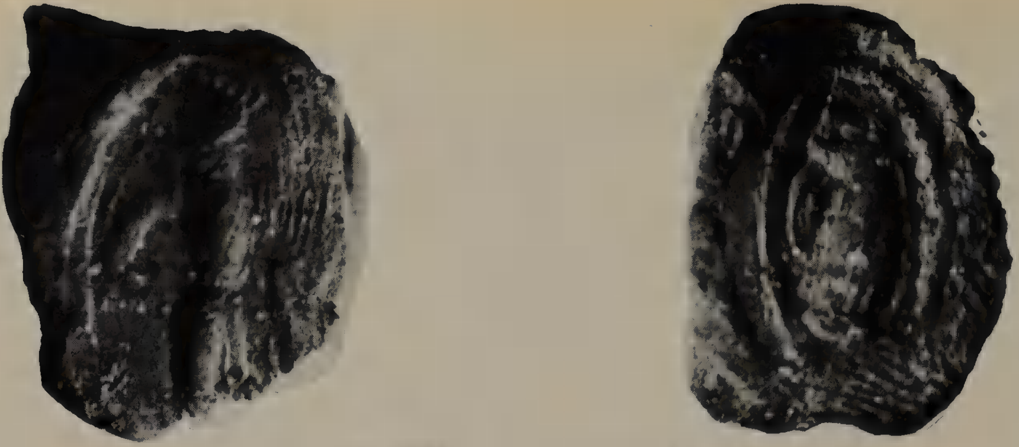
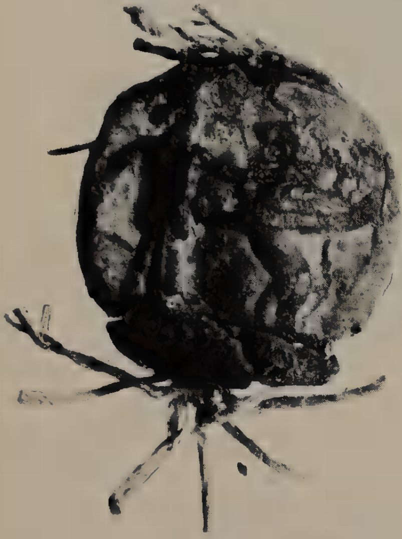


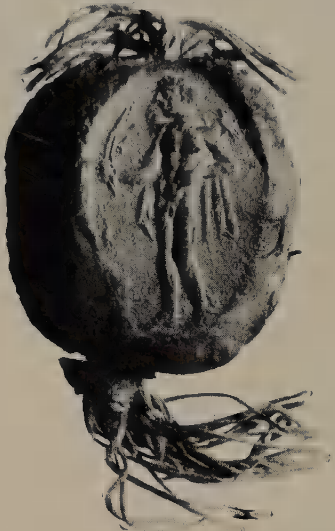
PLATE 61. The Seal of the Governor of Samaria. It was affixed to Papyrus 5, a contract relating to the sale of a vineyard dating probably from the early reign of Artaxerxes III (358-338 B.C.). Photograph courtesy of the Palestine Archaeological Museum.



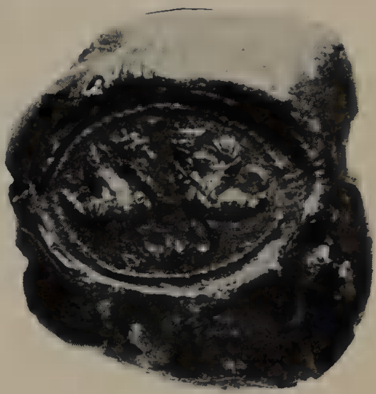
a. and b. Seal WD I.3 No. 22 with double sealing.



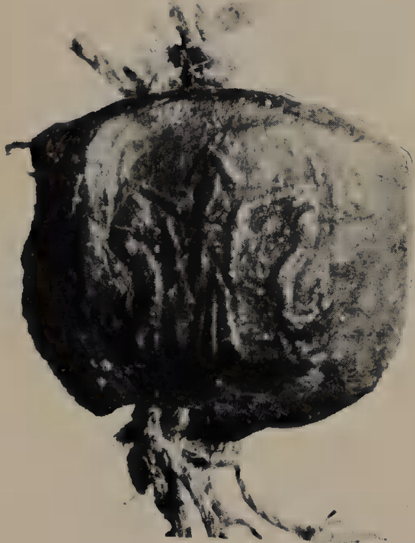
c. Seal No. 4.



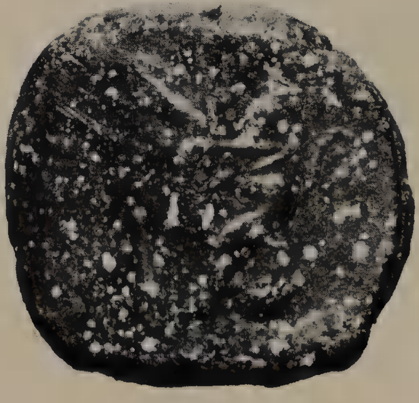
d. Seal No. 14.



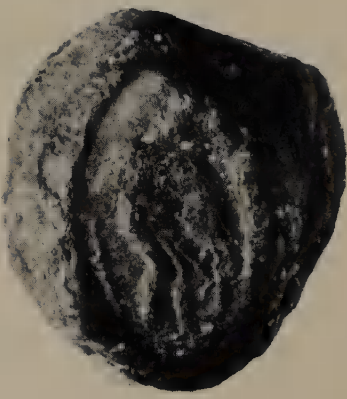
e. Seal No. 25.



f. Seal No. 17.

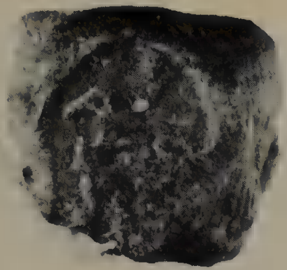


g. Seal No. 51.

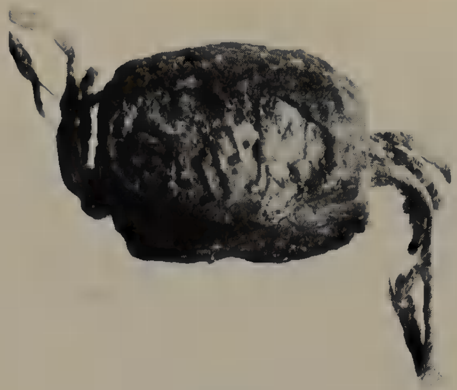


h. Seal No. 42.

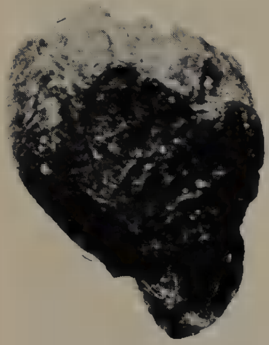
Plate 62. Seals from the Dâliyeh Papyri. Photographs courtesy of the Palestine Archaeologcal Museum.



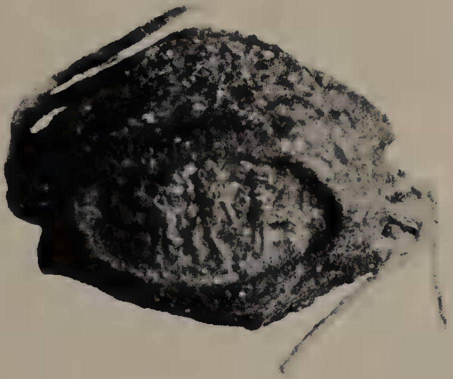
i. Seal No. 26.



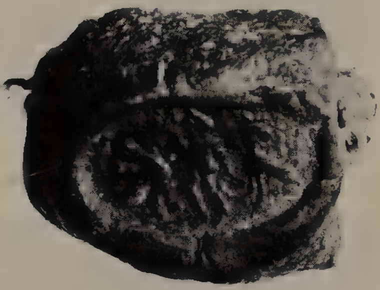
j. Seal No. 3A.



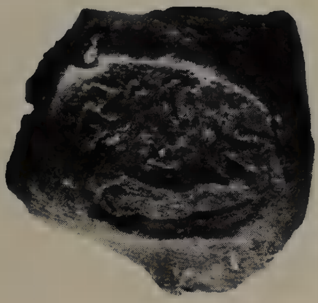
k. Seal No. 10A.



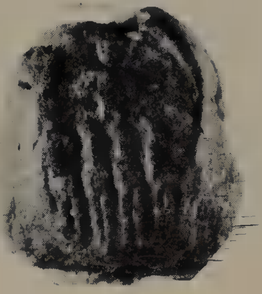
l. Seal No. 11B.



m. Seal No. 12.

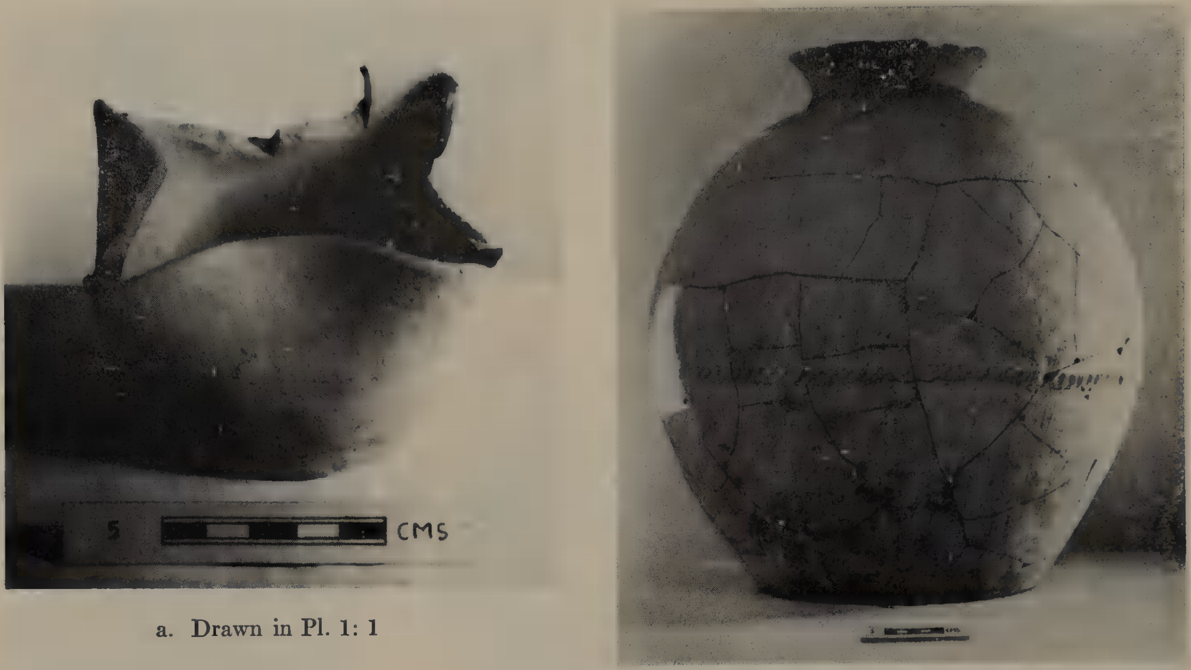


n. Seal No. 24.



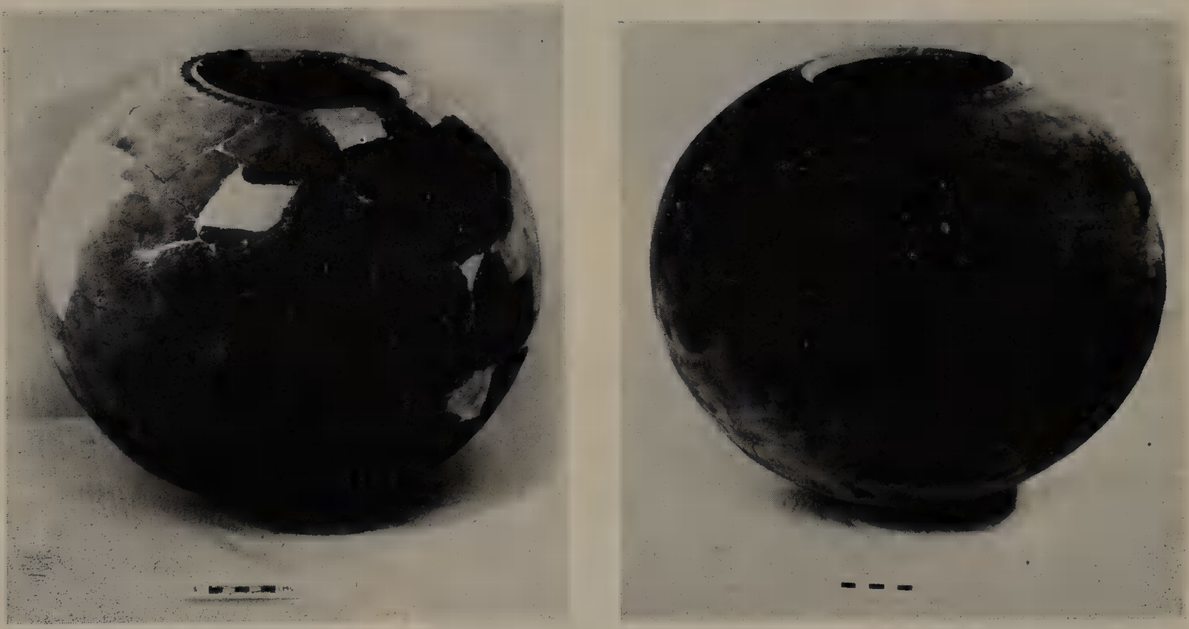
o. Seal No. 46.

Plate 63. Seals from the Dâliyeh Papyri. Photographs courtesy of the Palestine Archaeological Museum.



a. Drawn in Pl. 1: 1

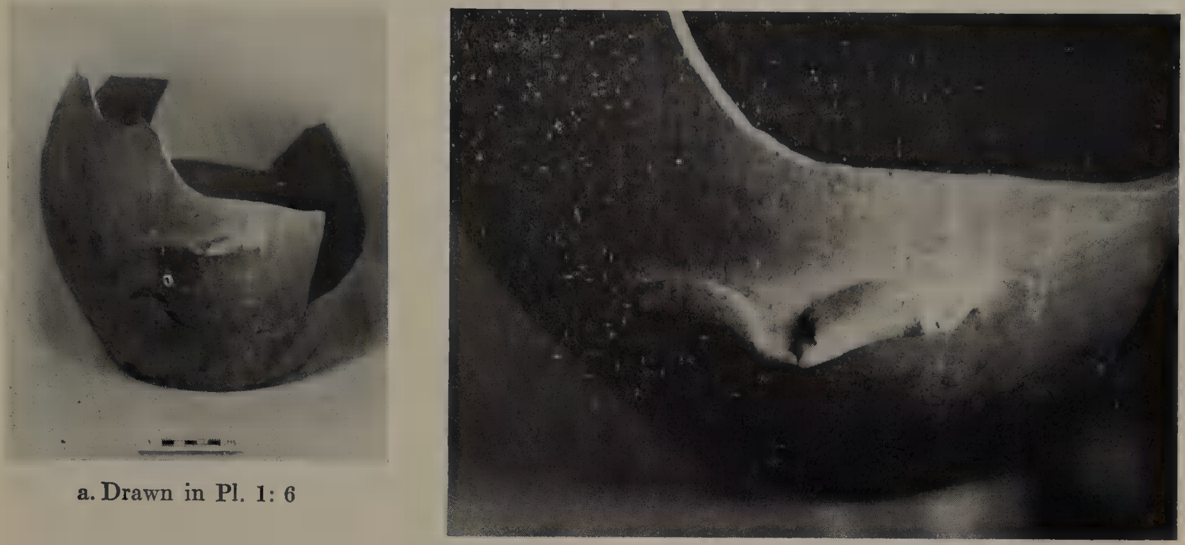
b. Drawn in Pl. 1: 4



c. Drawn in Pl: 1: 5

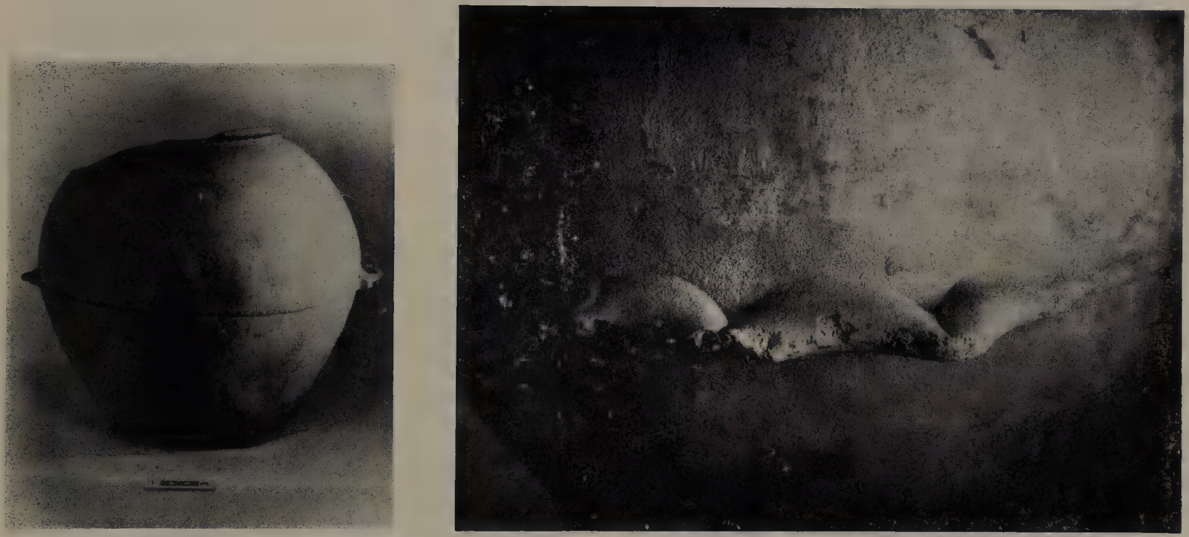
d. Drawn in Pl. 1: 7

PLATE 64. MB I Pottery from Cave II.



a. Drawn in Pl. 1: 6

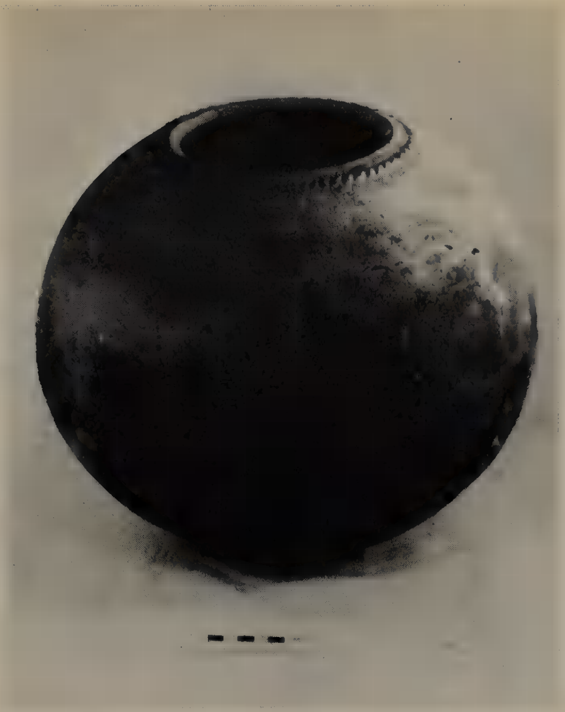
b. Ledge handle of Pl. 1: 6



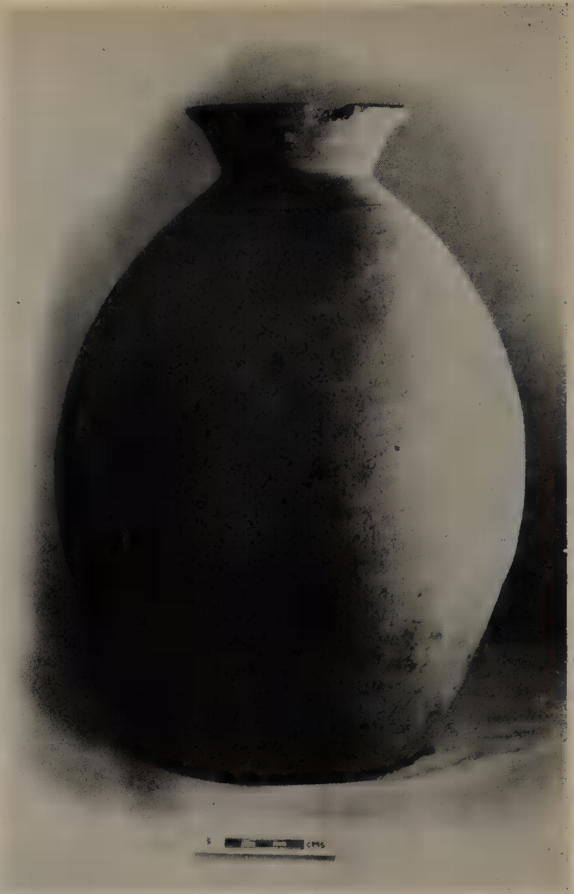
c. Drawn in Pl. 2: 8

d. Ledge handle of Pl. 2: 8

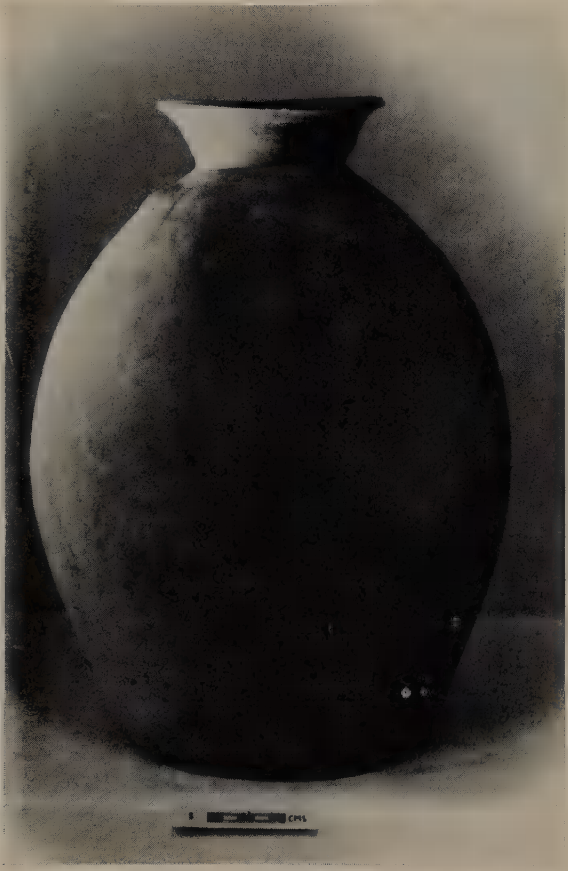
Plate 65. MB I Pottery from Cave II.



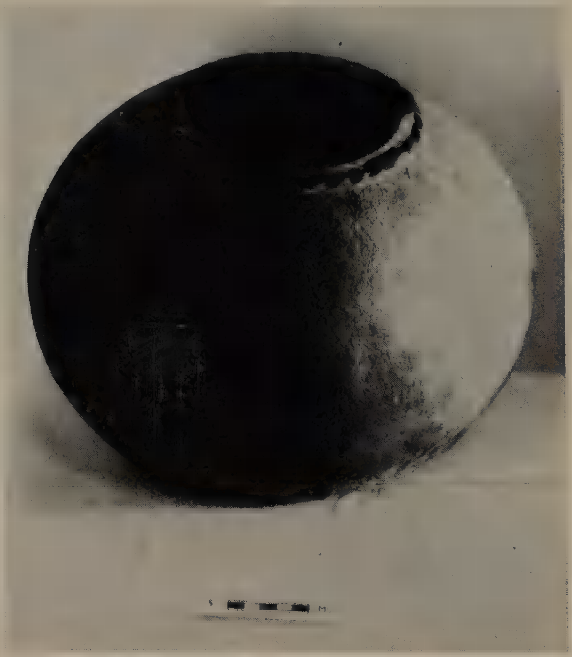
a. Drawn in Pl. 2: 9



b. Drawn in Pl. 2: 12

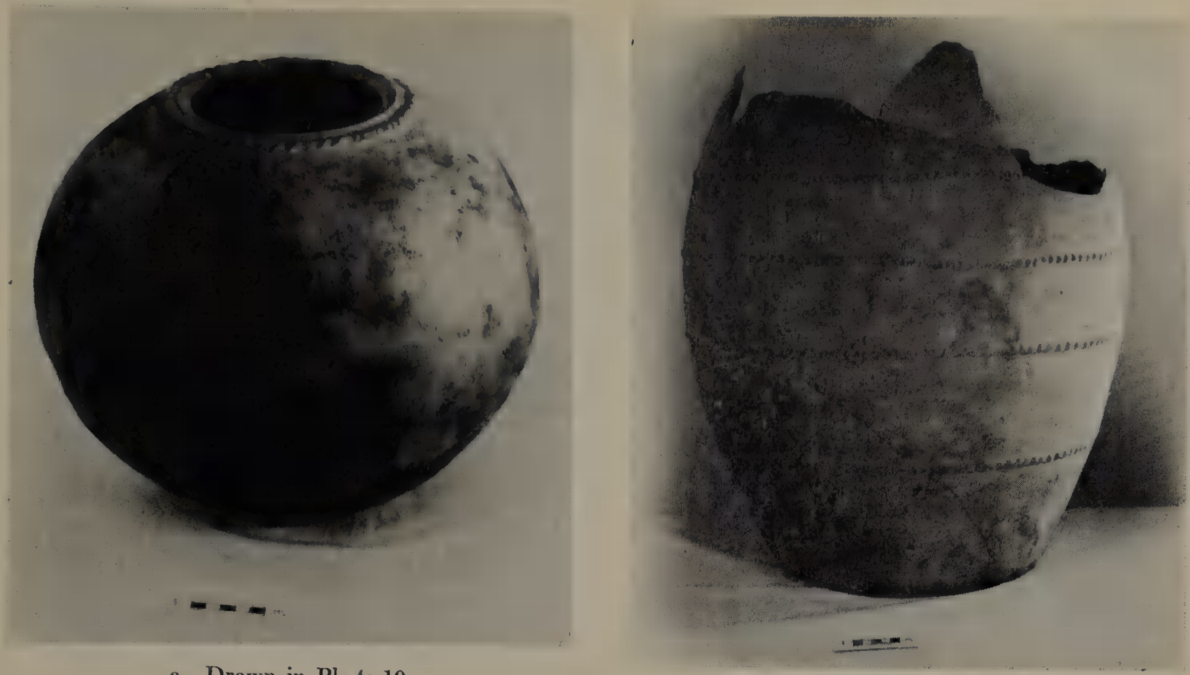


c. Drawn in Pl. 3: 14



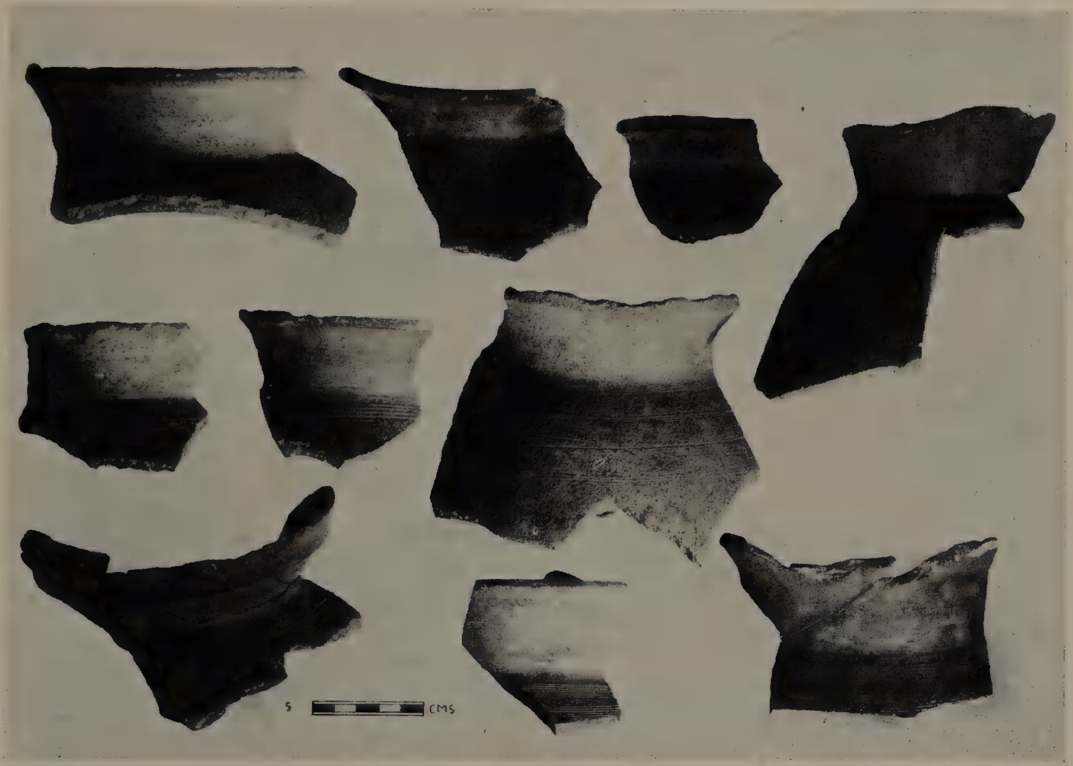
d. Drawn in Pl. 3: 16

PLATE 66. MB I Pottery from Cave II.



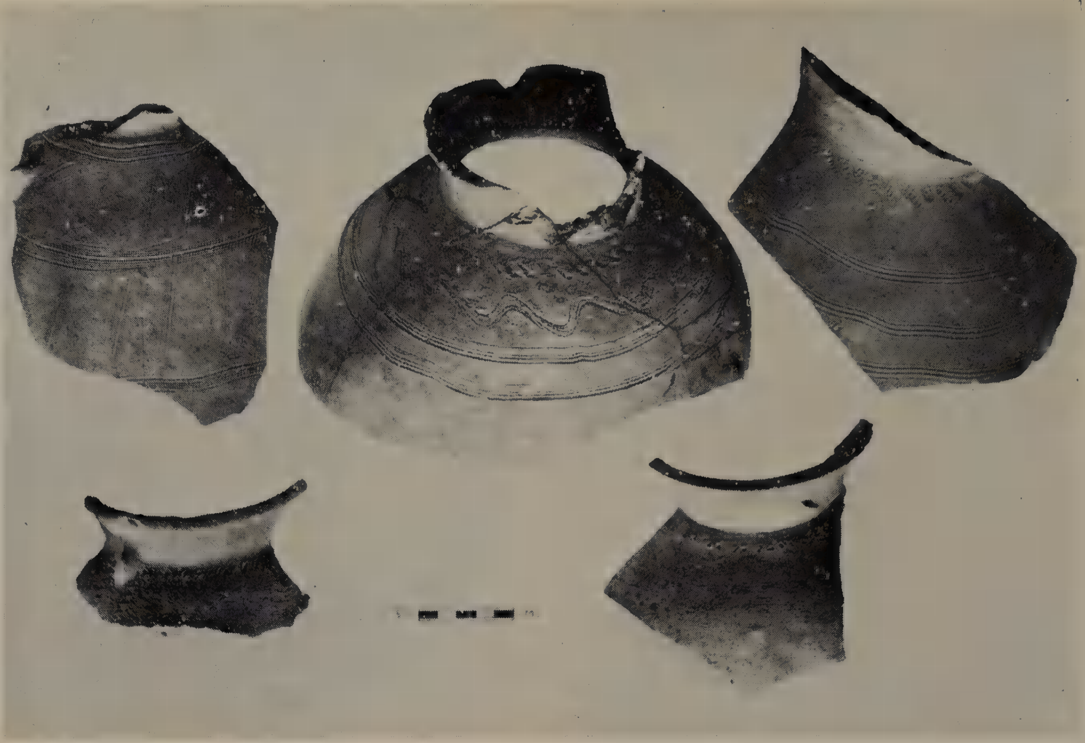
a. Drawn in Pl. 4: 19

b. Drawn in Pl. 4: 21

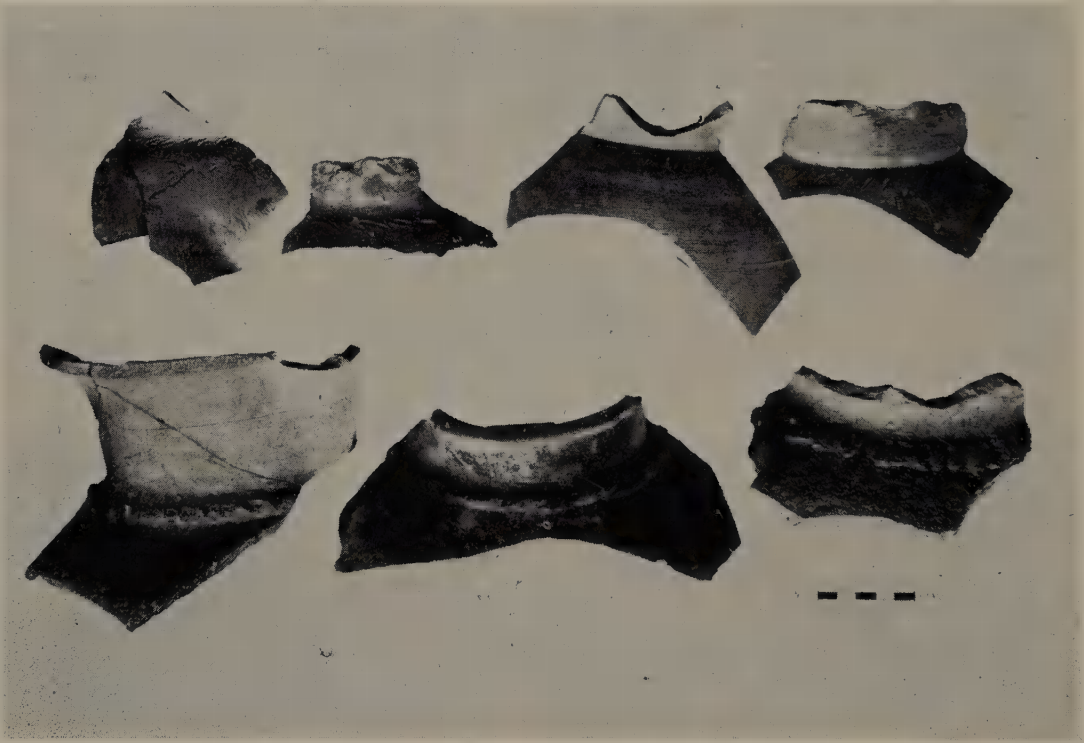


c. Sherds drawn in Pl. 5: 1-10

Plate 67. MB I Pottery from Cave II.

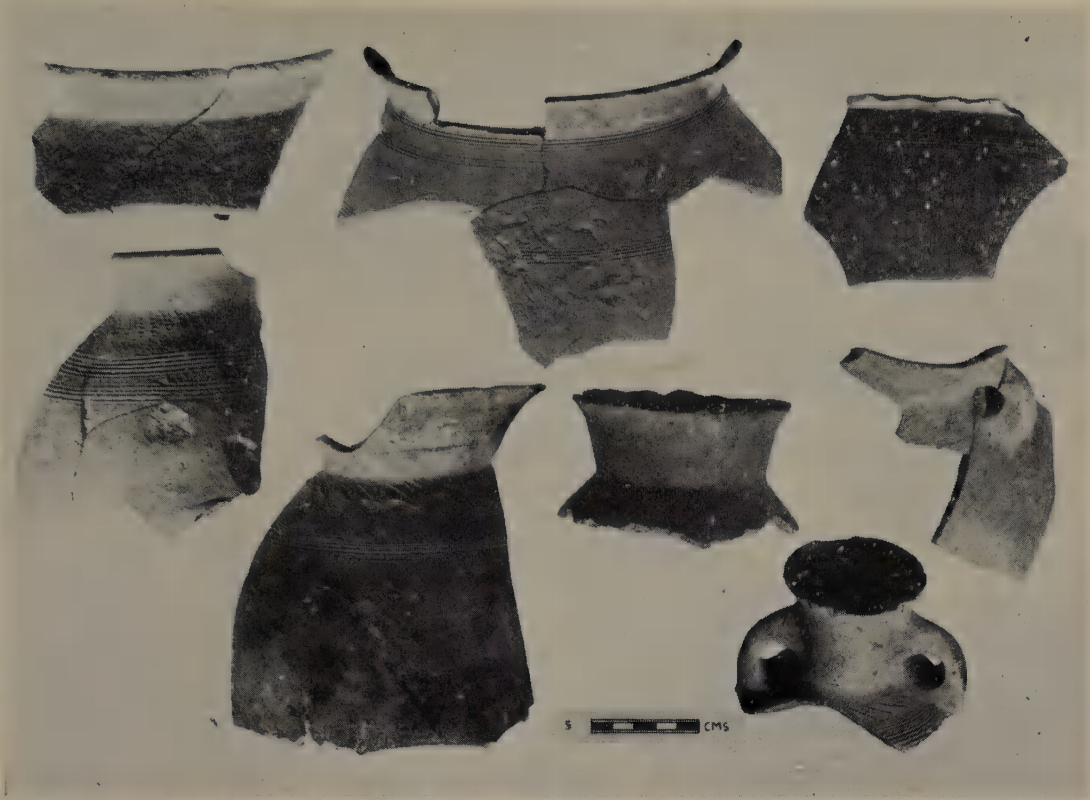


a. Drawn in Pl. 6: 1-5

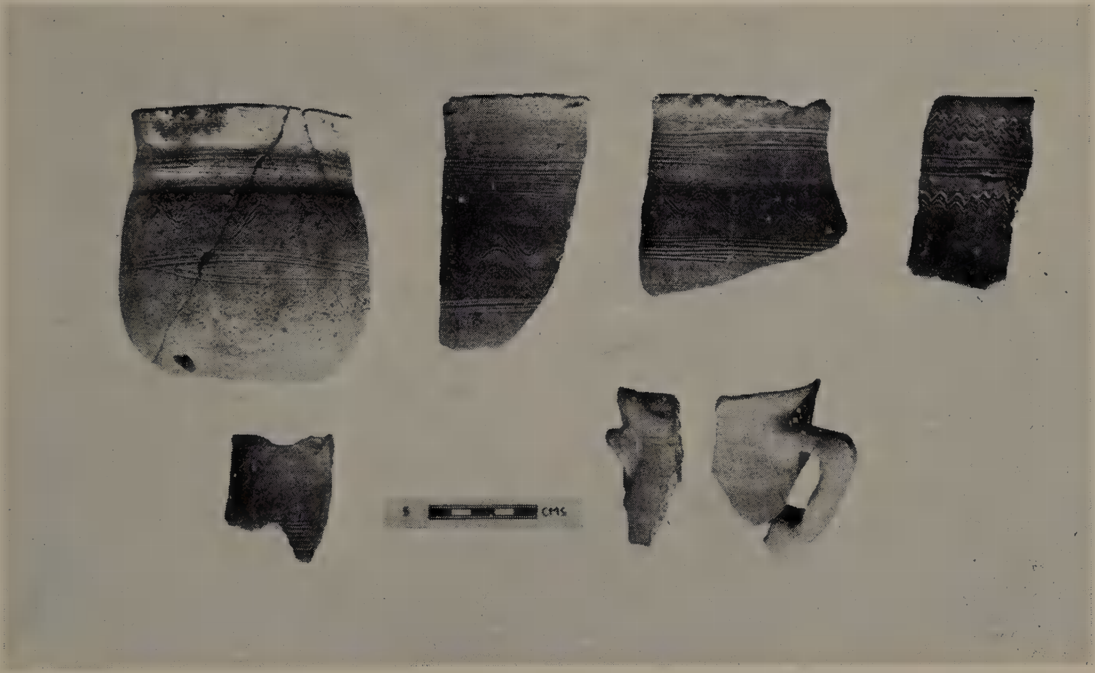


b. Drawn in Pl. 7: 1-7

PLATE 68. MB I Pottery from Cave II.

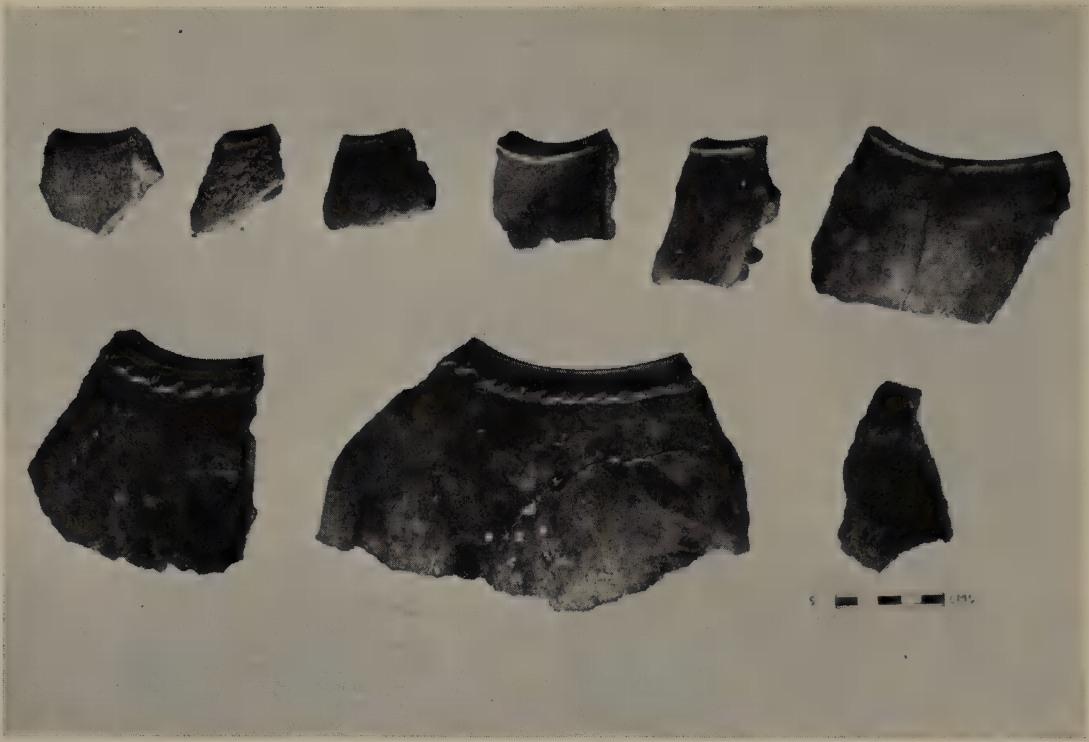


a. Drawn in Pl. 8: 1-5, 7, 11, 12

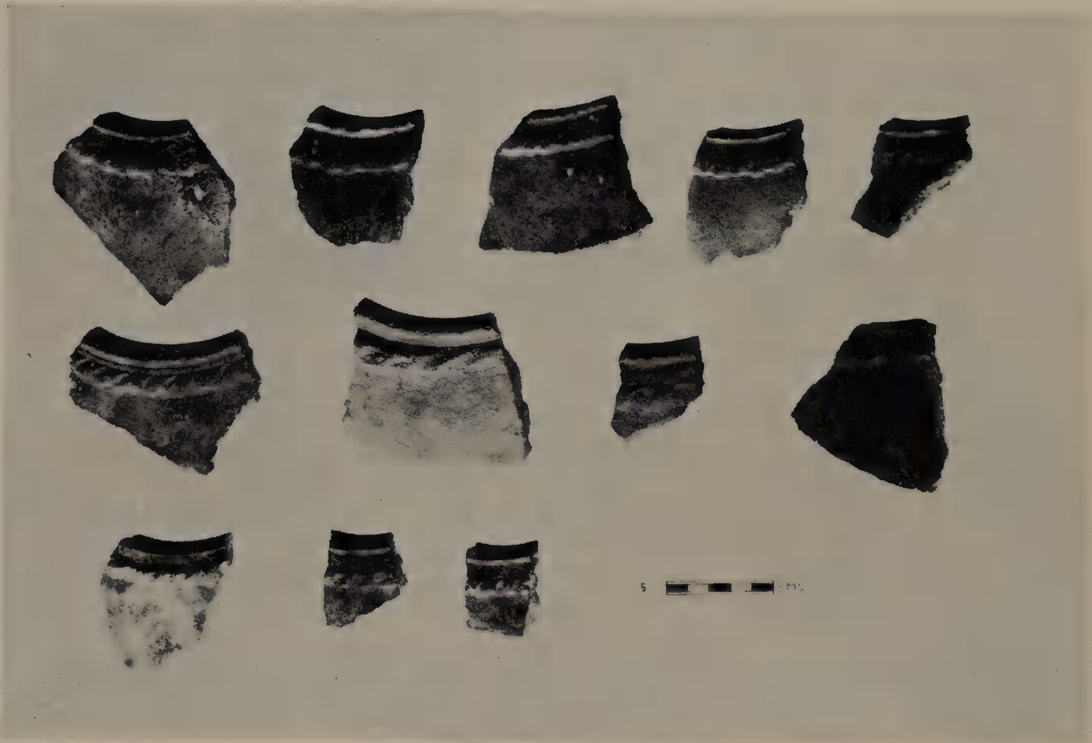


b. Drawn in Pl. 9: 1-6

PLATE 69. MB I Pottery from Cave II.

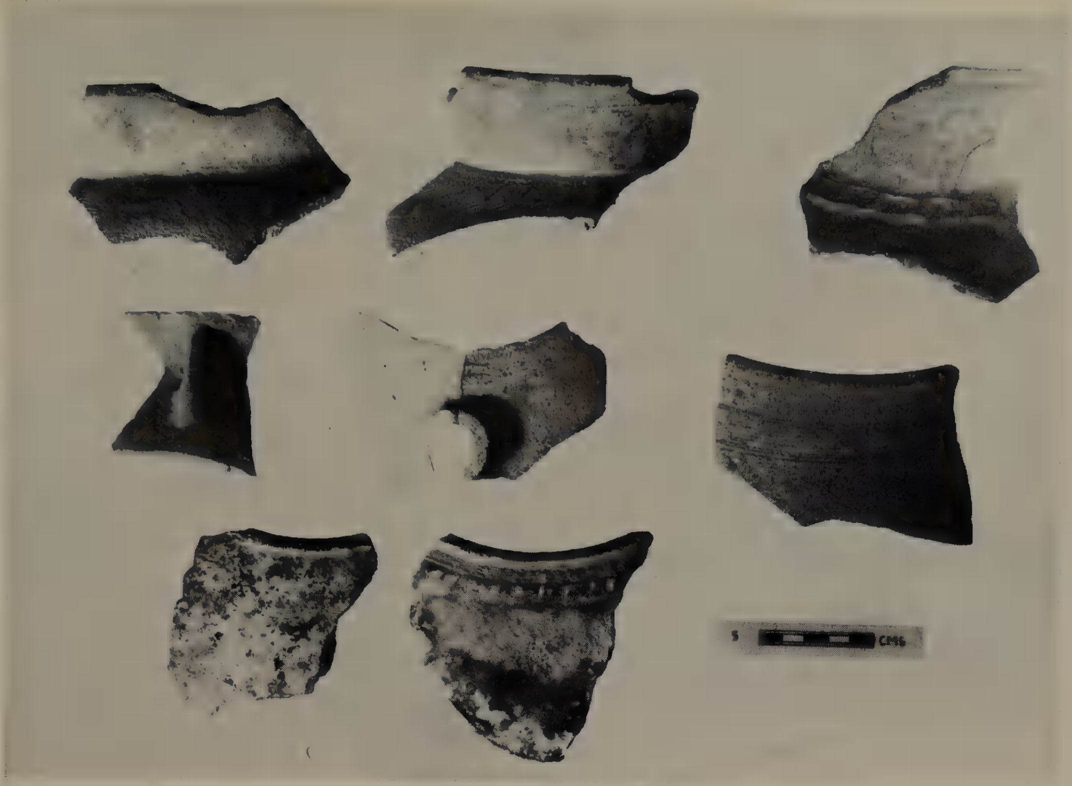


a. Drawn in Pl. 9: 7-15

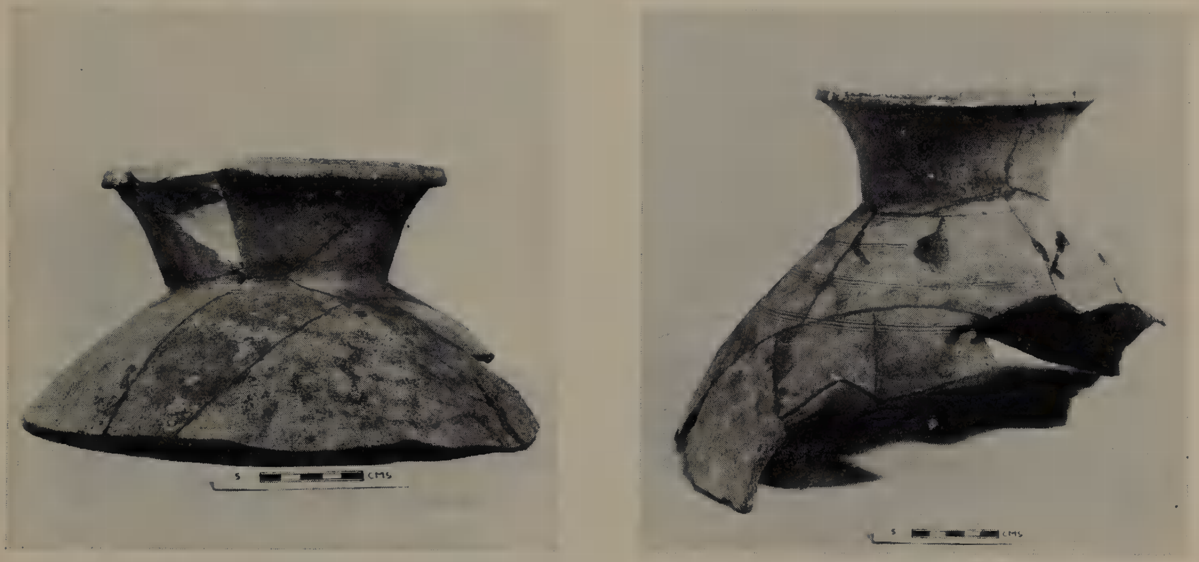


b. Drawn in Pl. 10: 1-12

PLATE 70. MB I Pottery from Cave II.



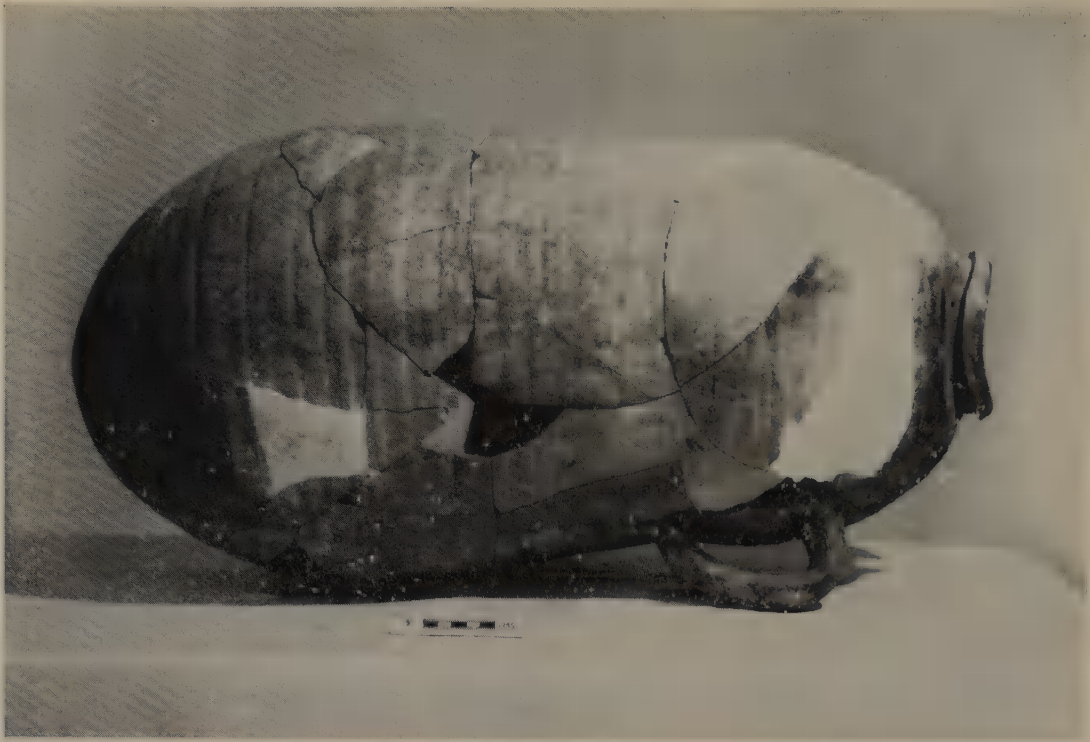
a. Drawn in Pl. 12: 1-8



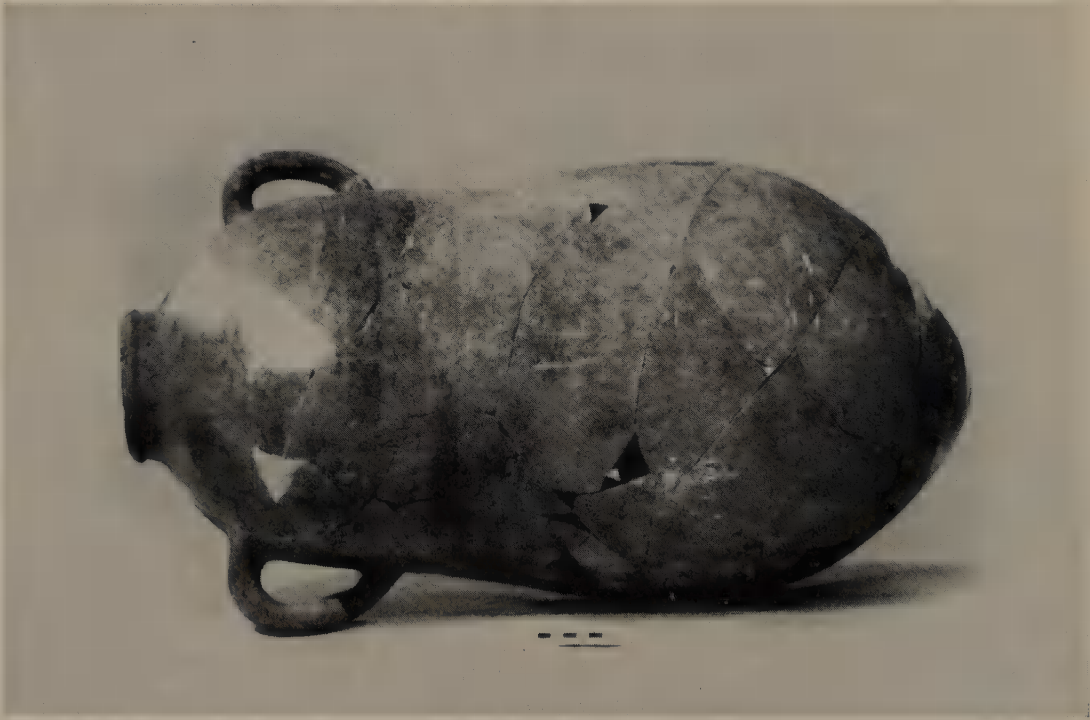
b. Drawn in Pl. 13: 1

c. Drawn in Pl. 13: 2

PLATE 71. MB I Pottery from Cave II.

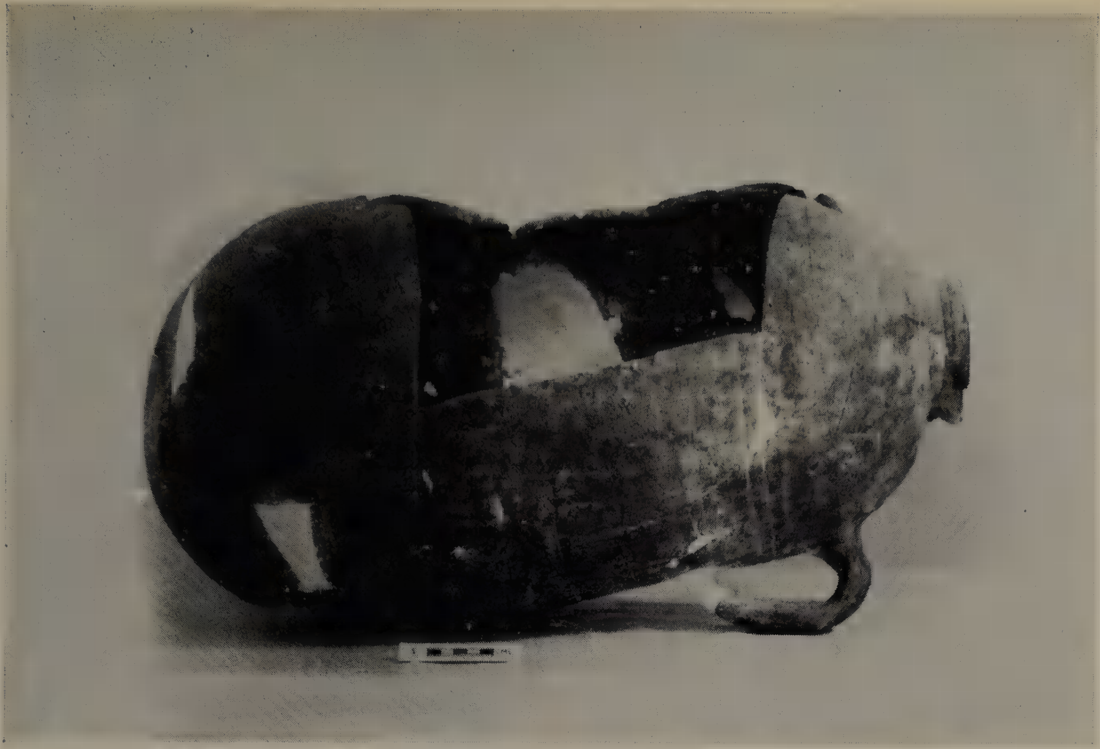


a. Drawn in Pl. 18: 1

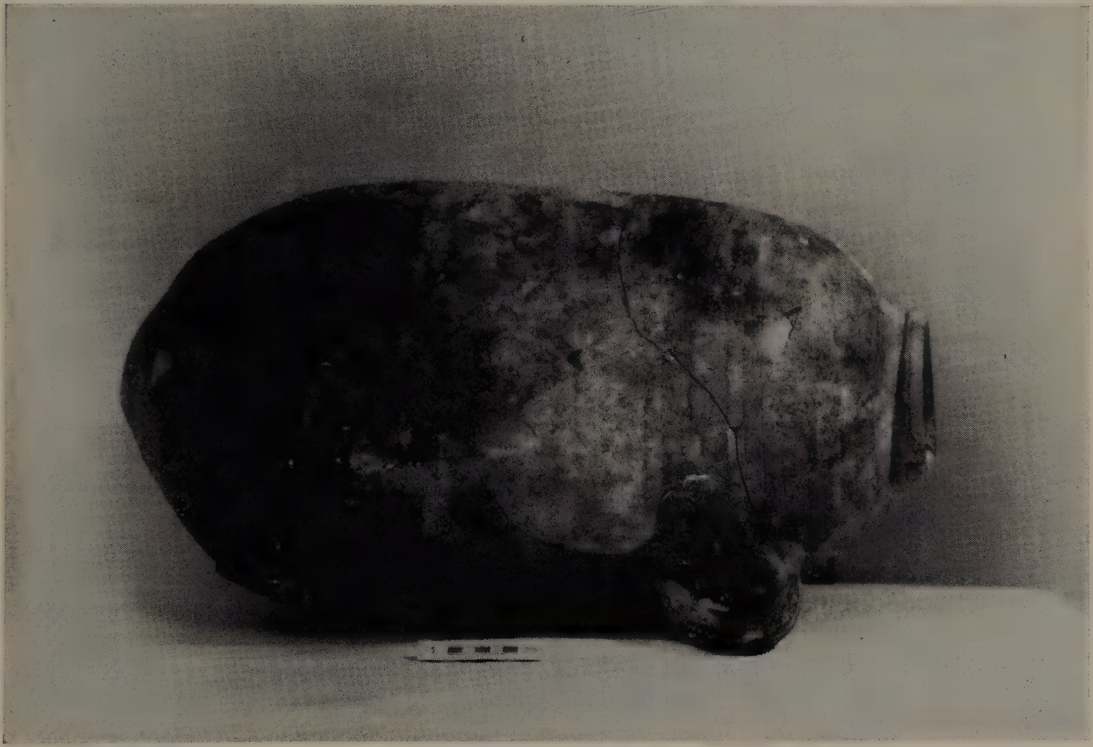


b. Drawn in Pl. 18: 2

PLATE 72. Late Persian Storage Jars from Cave I.

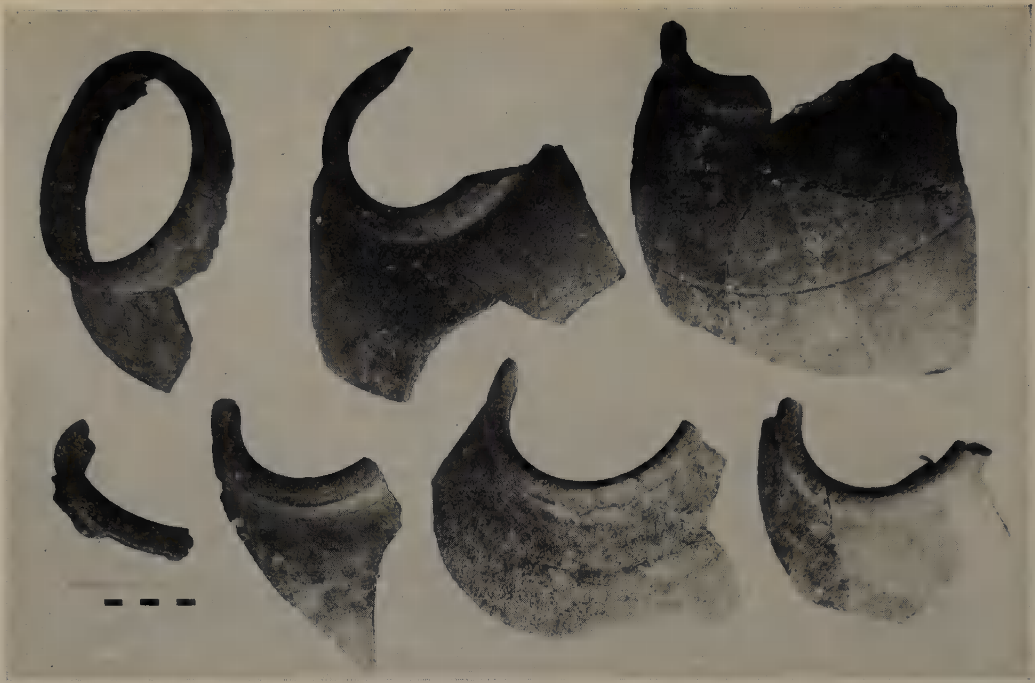


a. Drawn in Pl. 19: 1

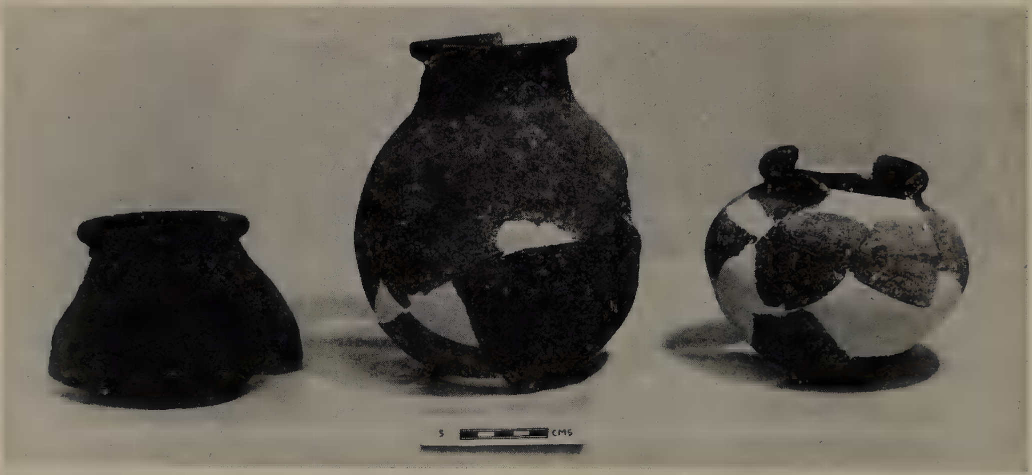


b. Drawn in Pl. 19: 3.

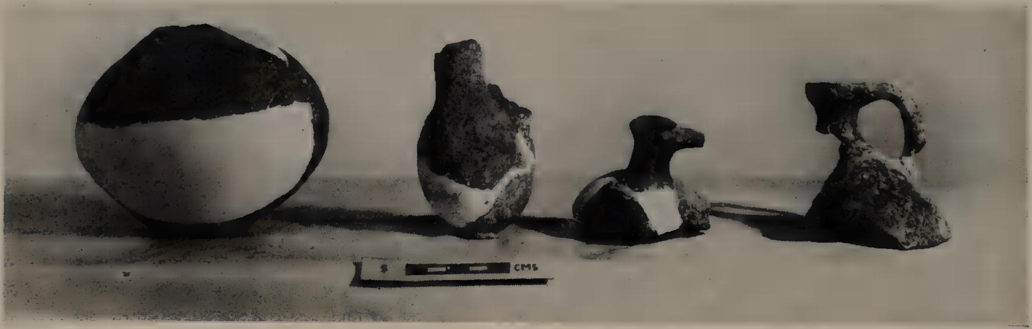
PLATE 73. Late Persian Storage Jars from Cave I.



a. Drawn in Pl. 20: 1-7

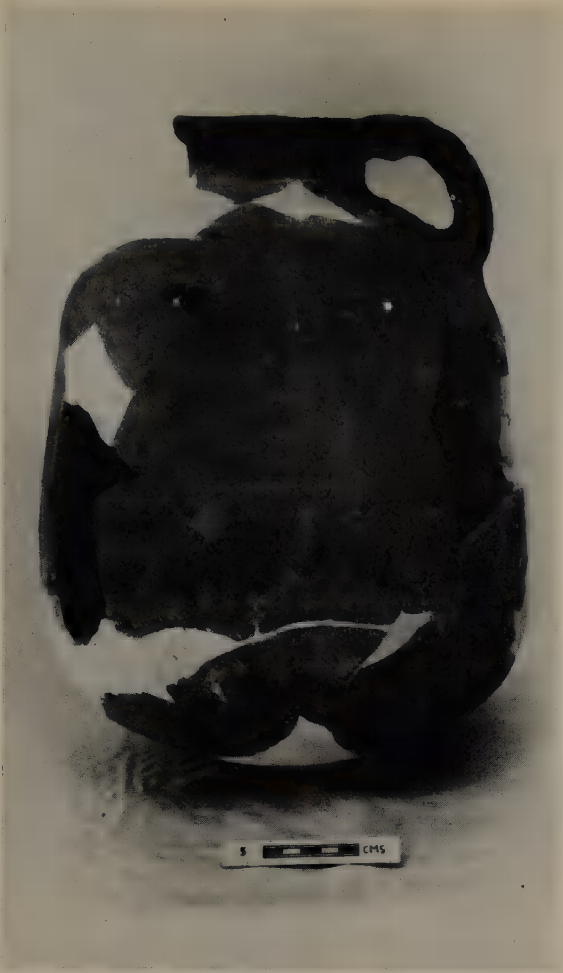


b. Drawn in Pl. 22: 2, 1, 3

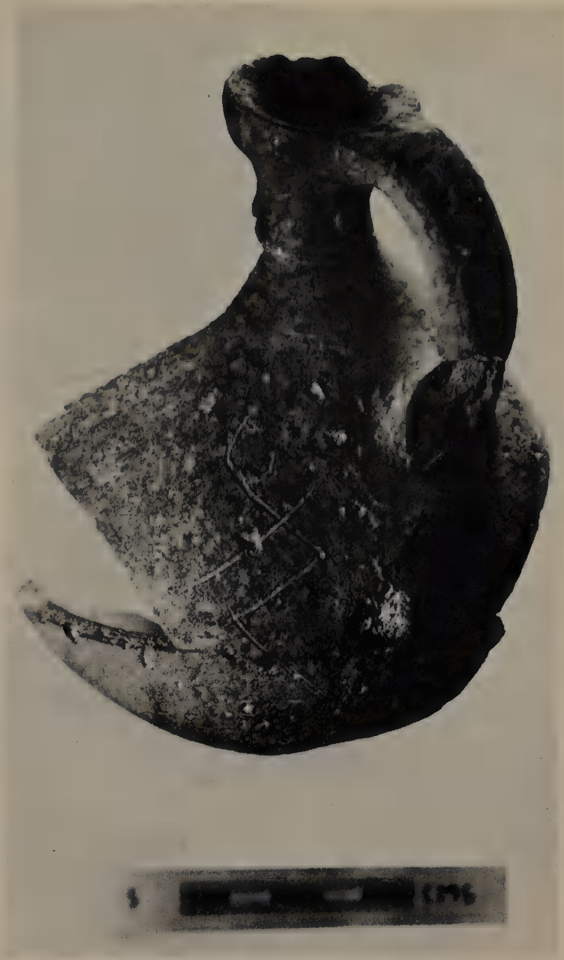


c. Drawn in Pl. 22: 7, 6, 5, 4

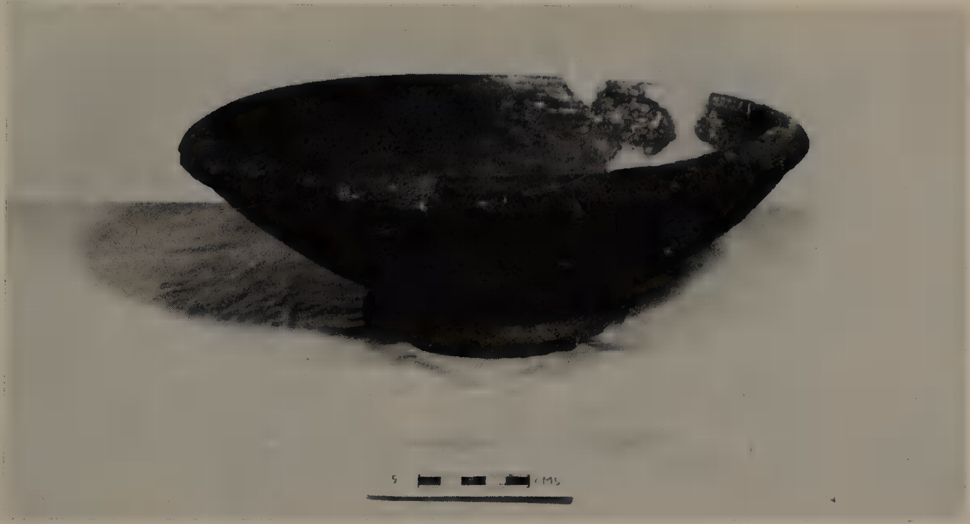
Plate 74. Late Persian Pottery from Cave I.



a. Drawn in Pl. 21: 1

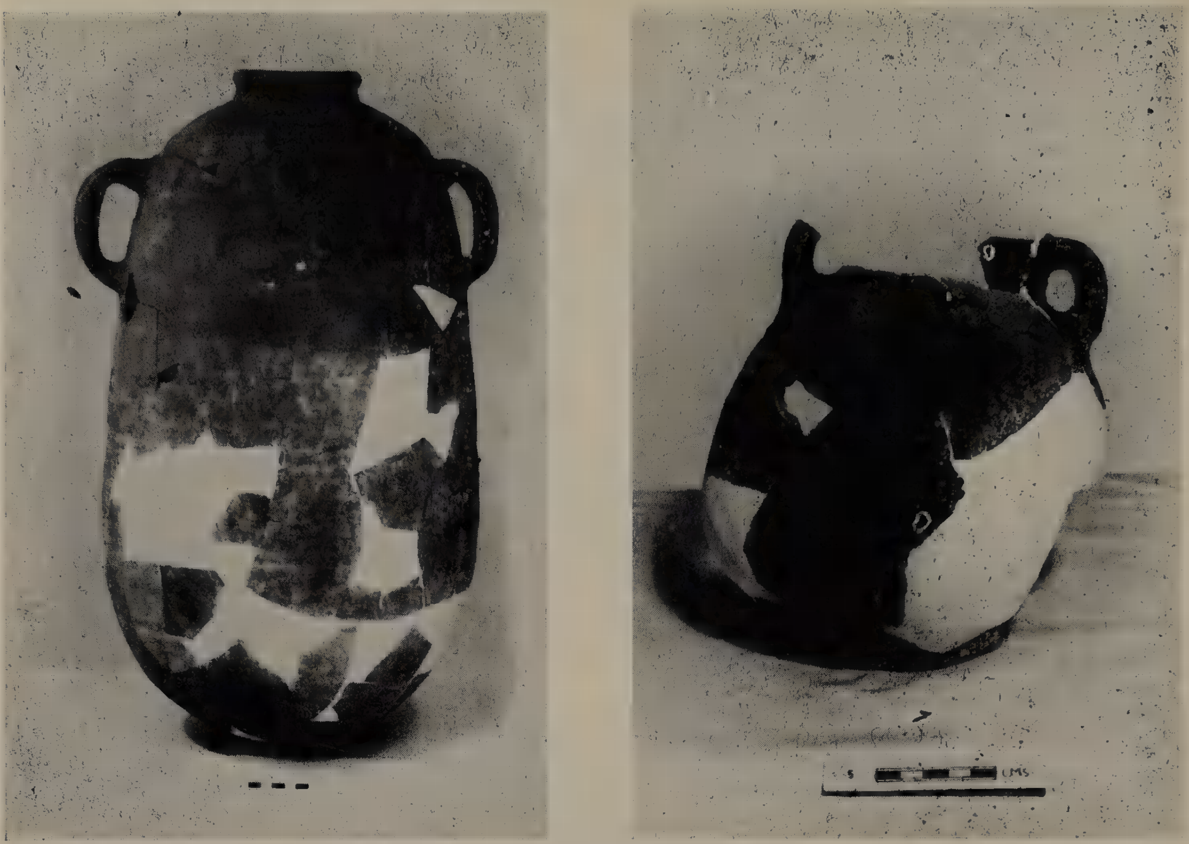


b. Drawn in Pl. 22: 4

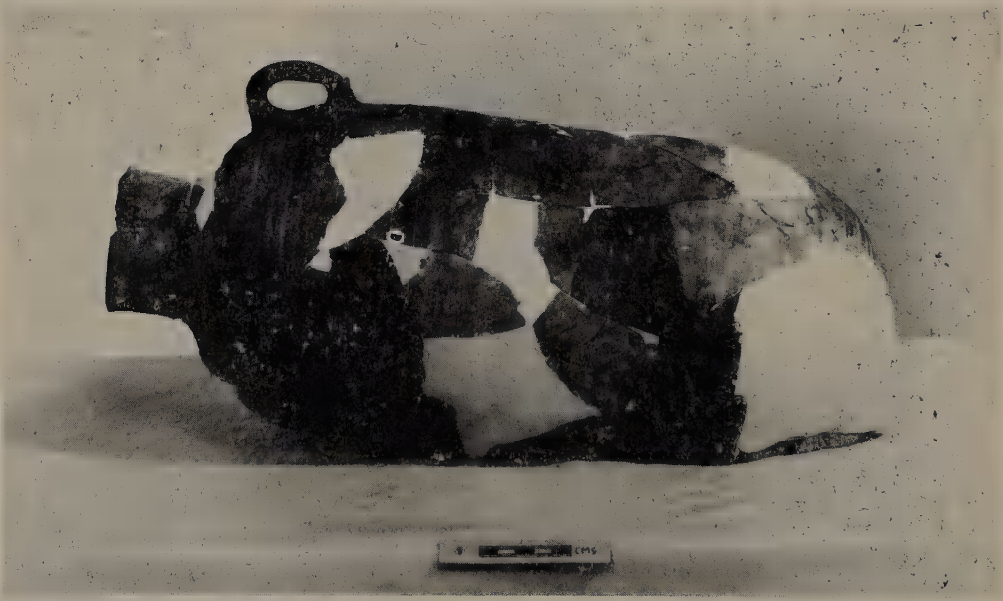


c. Drawn in Pl. 23: 1

PLATE 75. Late Persian Pottery from Cave I.

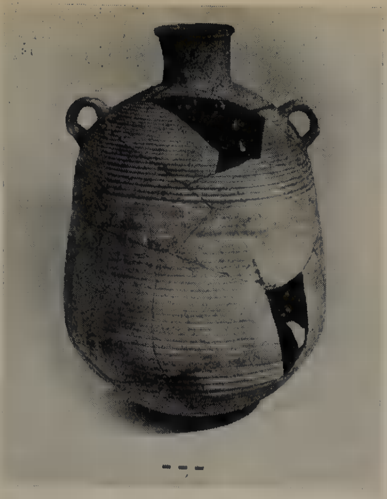


a. Drawn in Pl. 19: 2 b. Drawn in Pl. 23: 2

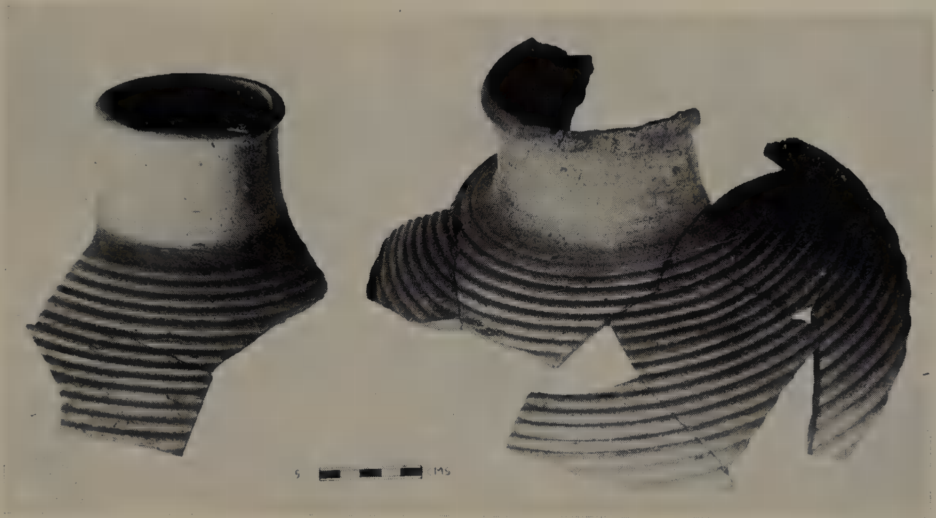


c. Drawn in Pl. 23: 4

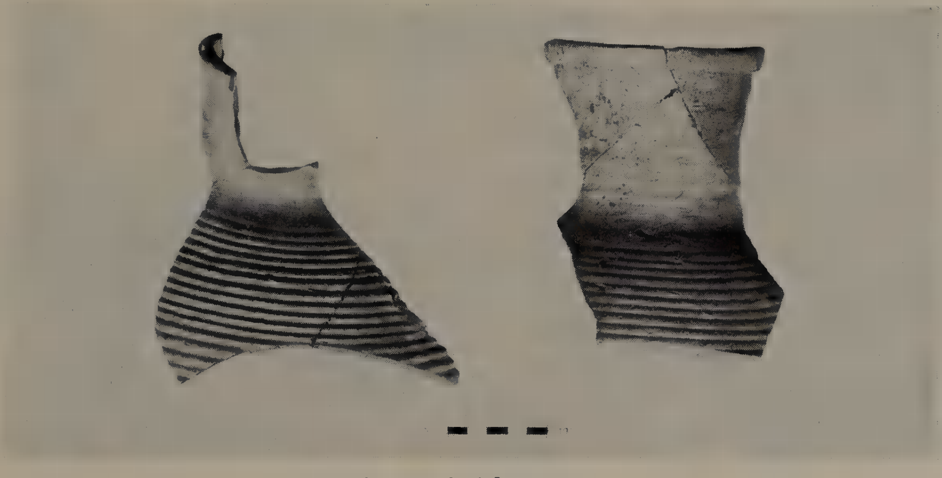
Plate 76. Late Persian (above) and Early Roman (below) Pottery from Cave I.



a. Storage Jar drawn in Pl. 24: 4

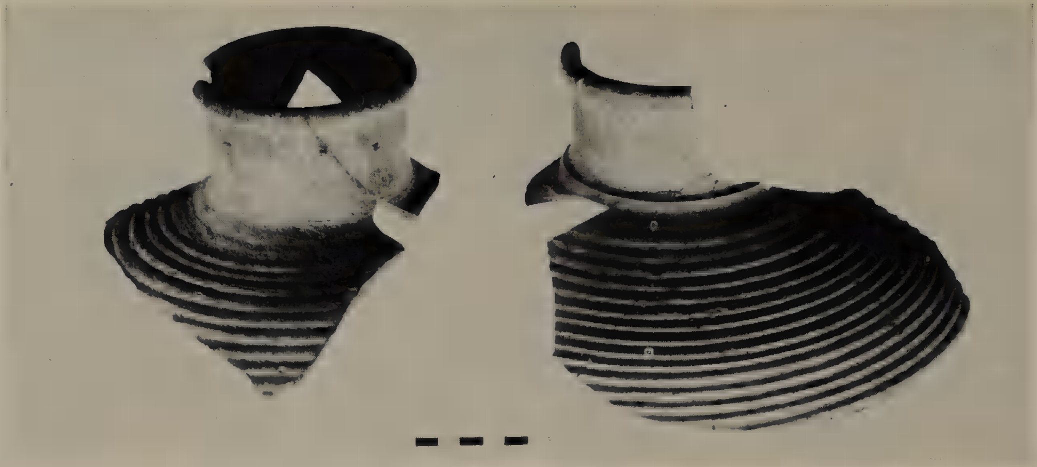


b. Drawn in Pl. 27: 2, 26: 4

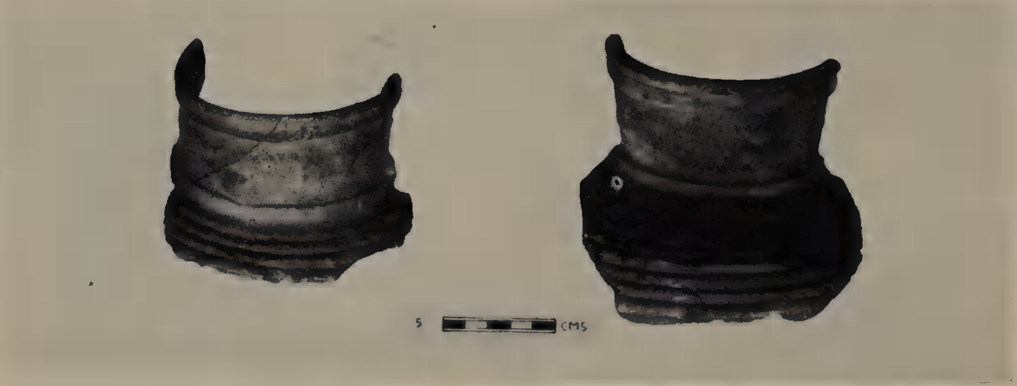


c. Drawn in Pl. 27: 6, 7

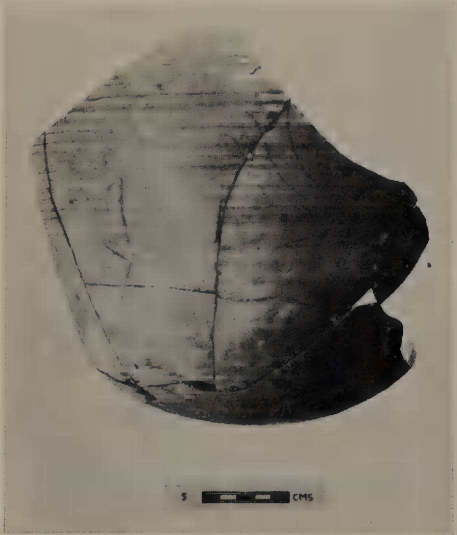
PLATE 77. Second-Revolt Pottery from Cave II.



a. Drawn in Pl. 24: 1, 25: 8



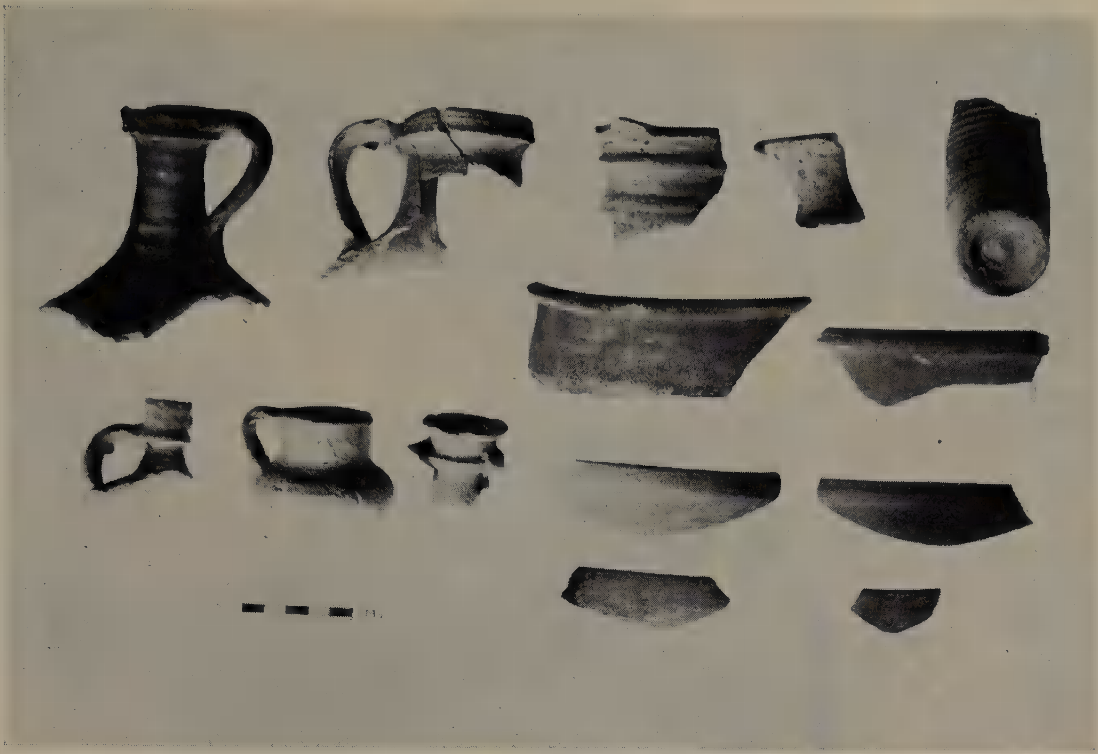
b. Drawn in Pl. 27: 11, 13



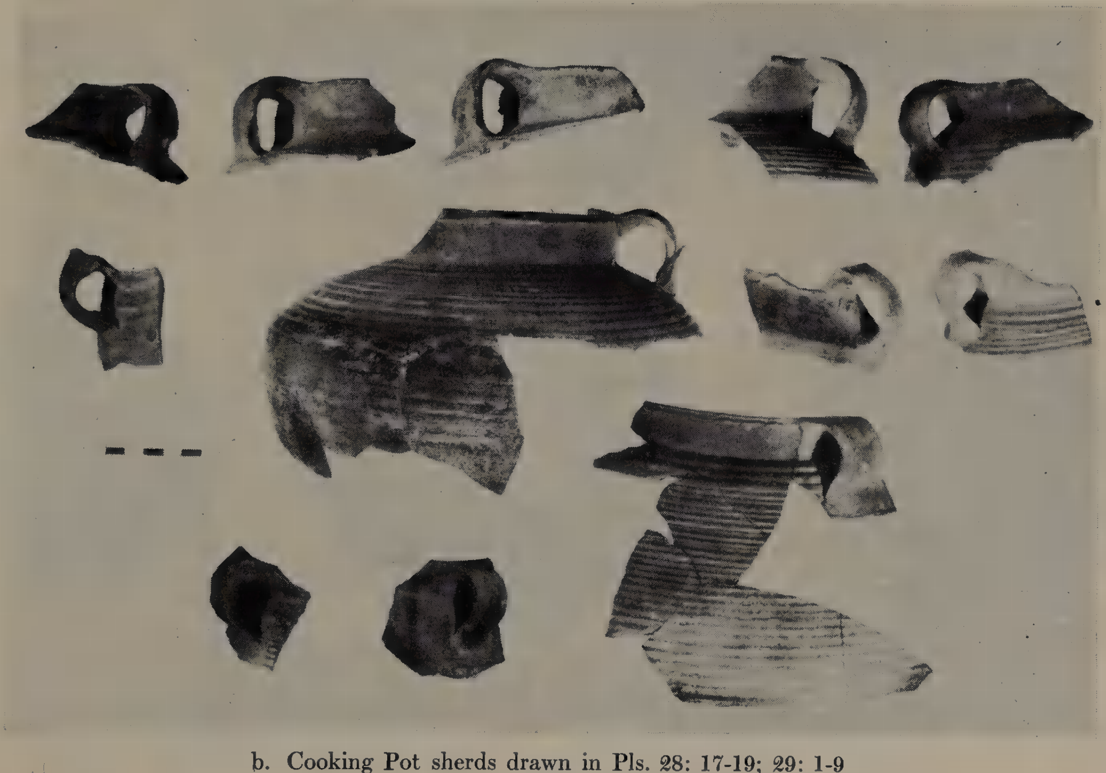
c. Drawn in Pl. 30: 1, 2, 3

d. Drawn in Pl. 30: 2, 3

PLATE 78. Second-Revolt Pottery from Cave II.

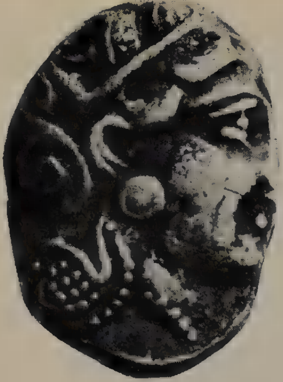


a. Drawn in Pl. 28: 1, 4-16



b. Cooking Pot sherds drawn in Pls. 28: 17-19; 29: 1-9

PLATE 79. Second-Revolt Pottery from Cave II.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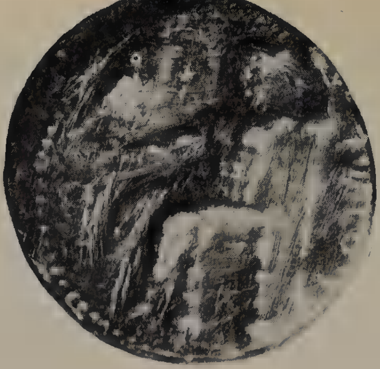
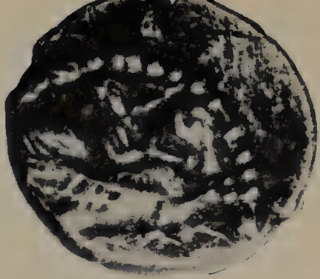
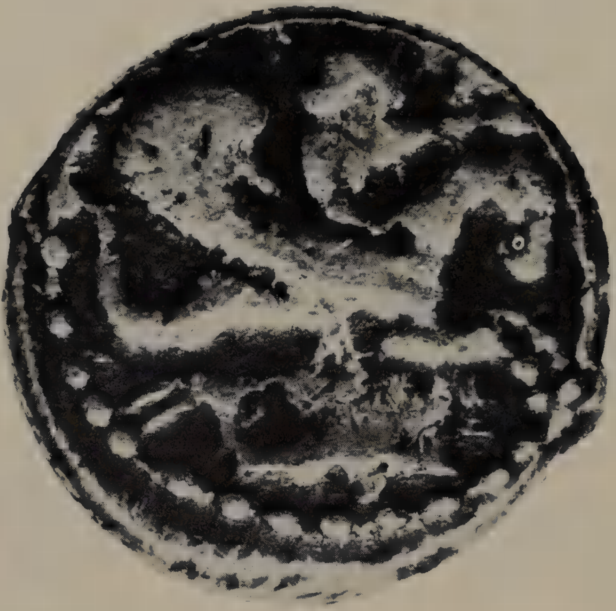

2.


3.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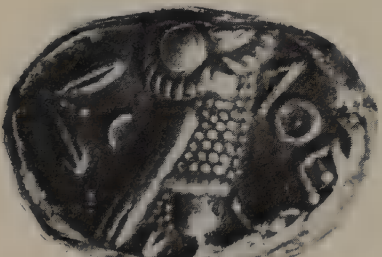
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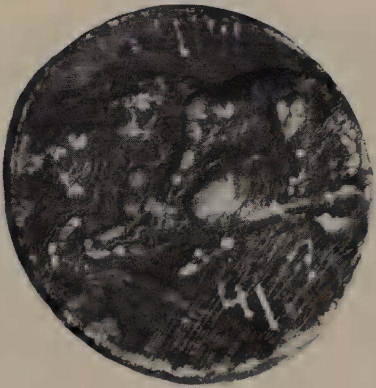

2.

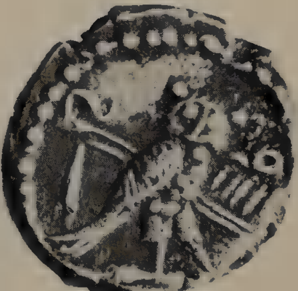
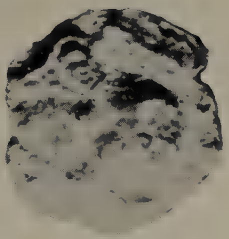
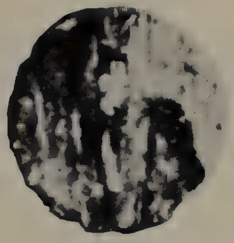

3.

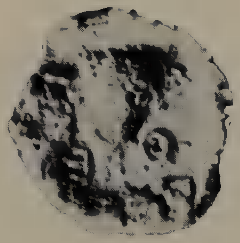
Plate 80. Coins from the Cave of the Papyri in the Wâdī ed-Dâliyeh. Photographs courtesy of the Palestine Archaeological Museum. 1. Attic tetradrachmon from the era of Philip II (359-336). 2. Mazaeus Stater, from late in his rule as satrap of Cilicia (361-333). 3 and 4. Tyrian didrachmon from the fifteenth year of the reign of Azemilkos king of Sidon.



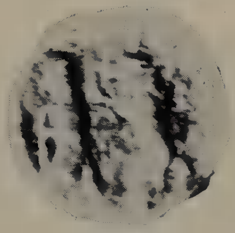
5.



6.



5.



6.

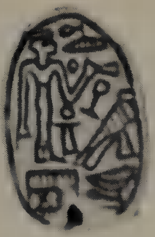
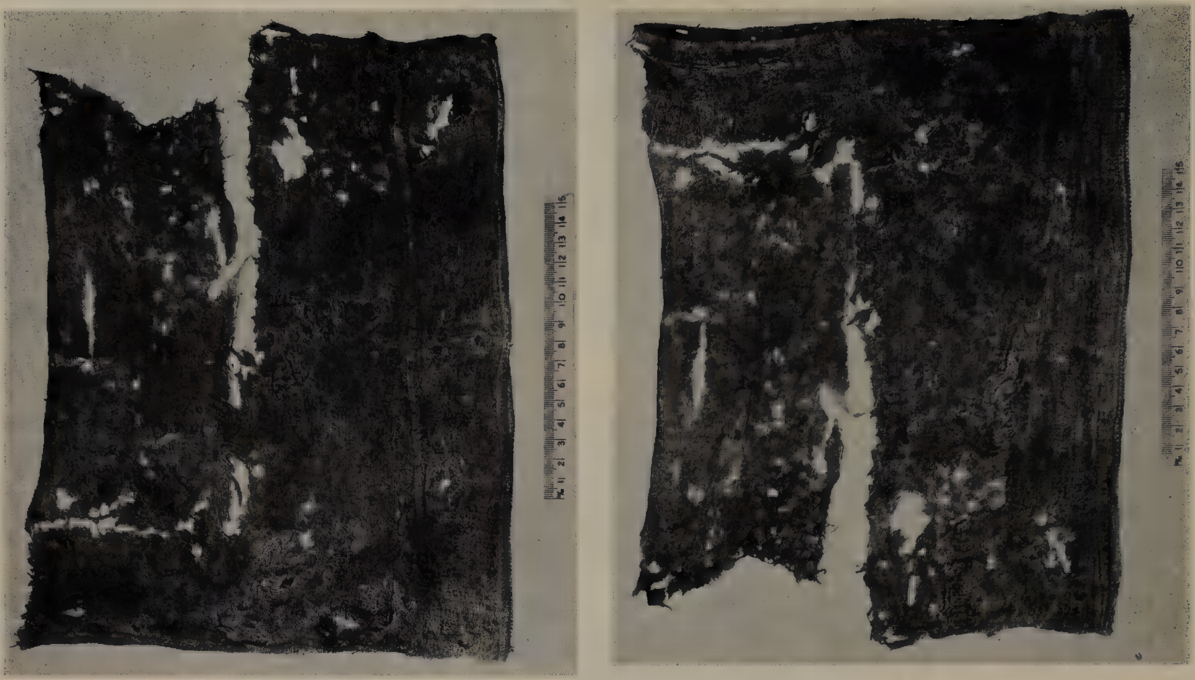


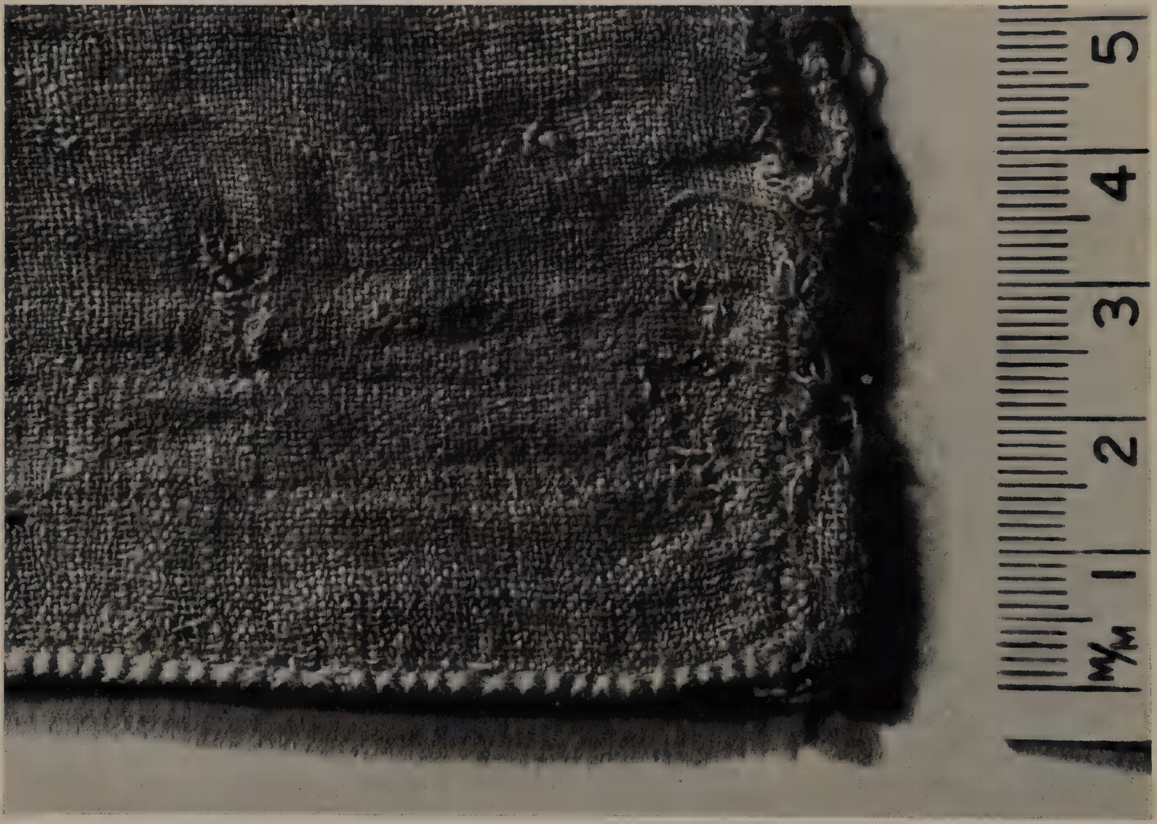
Plate 81. Above: Coins from the Cave of the Papyri in the Wâdī ed-Dâliyeh. (Top, obverse; middle, reverse.) 5. A Philisto-Arabian coin weighing a sixteenth of a sheqel. It dates from the middle of the fourth century B.C. 6. Sidonian sixteenth of a sheqel piece from the reign of Straton II (343/332 B.C.); the coin may be a Palestinian imitation of the Sidonian series.

Below: An Egyptian scarab of the fourth century B.C. probably worn as an amulet.



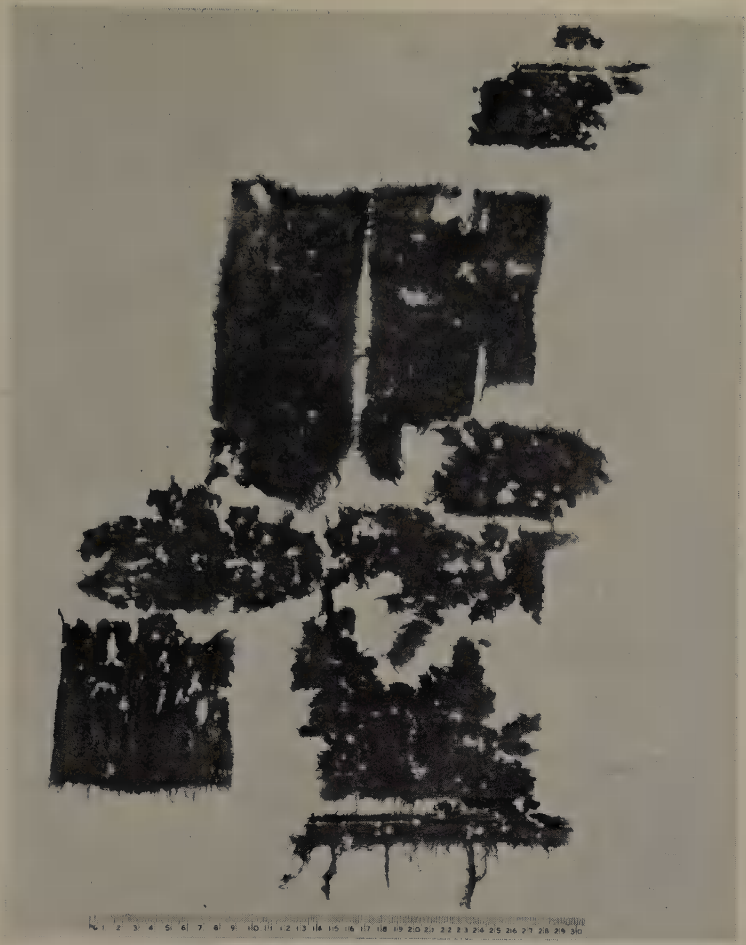
a. Front of tunic.

b. Back of tunic.

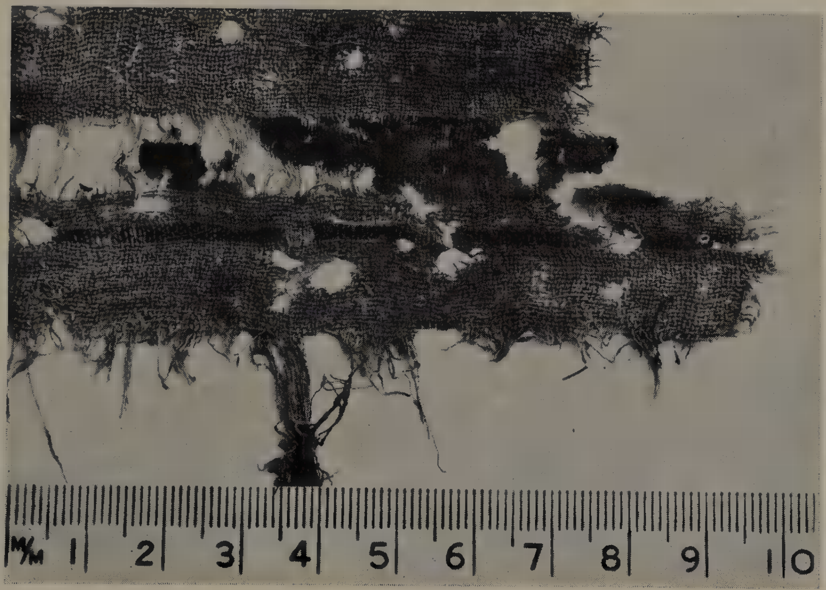


c. Detail. Photographs by Hallam Ashley, Norwich.

PLATE 82. Part of small child's tunic made from good quality scarf or veil. No. 1.

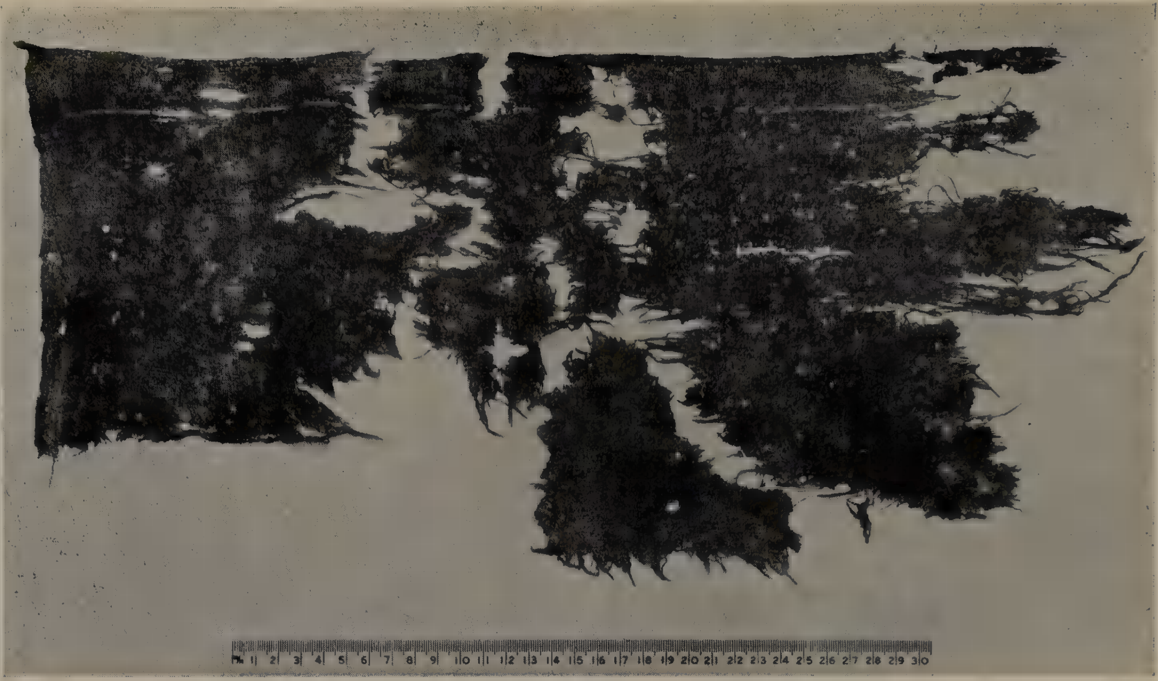


a. Fragments from fine scarf. No. 2.

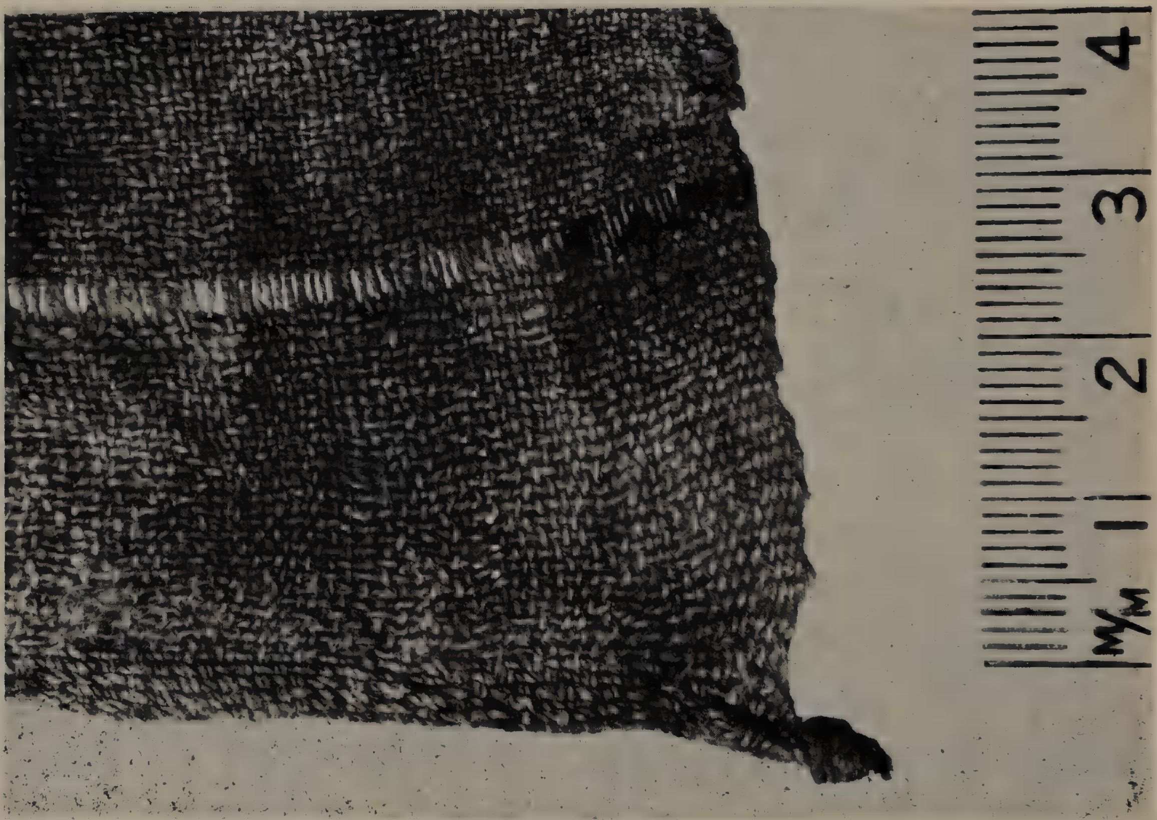


b. No. 2 detail. Photographs by Hallam Ashley, Norwich.

Plate 83.

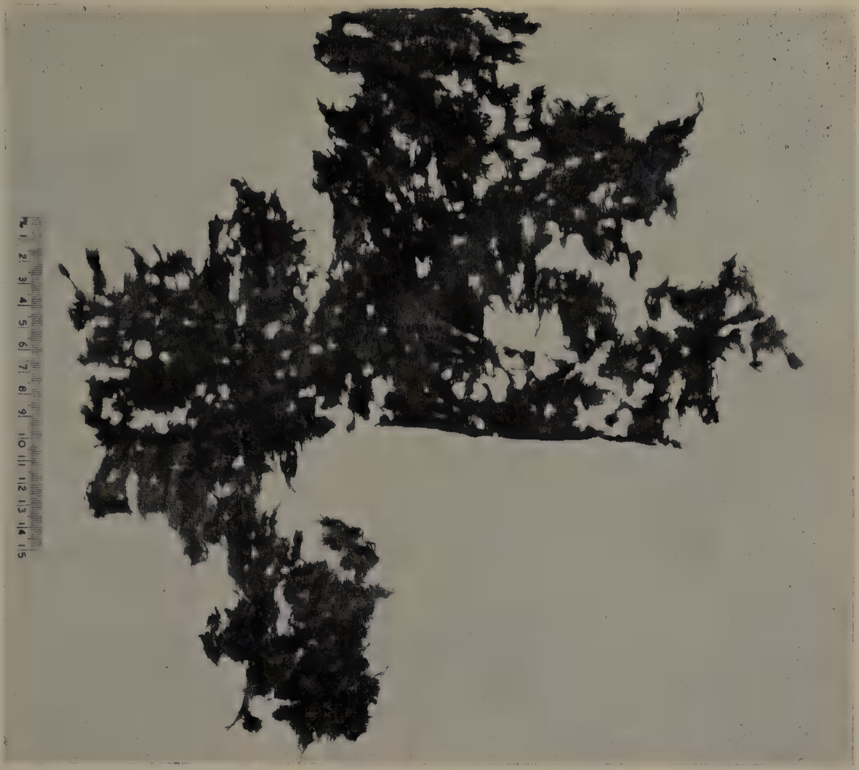


a. Linen fragments with colored wool band. No. 3.

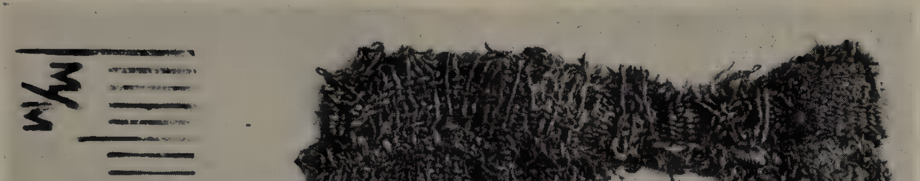


b. No. 3 detail. Photographs by Hallam Ashley, Norwich.

PLATE 84.

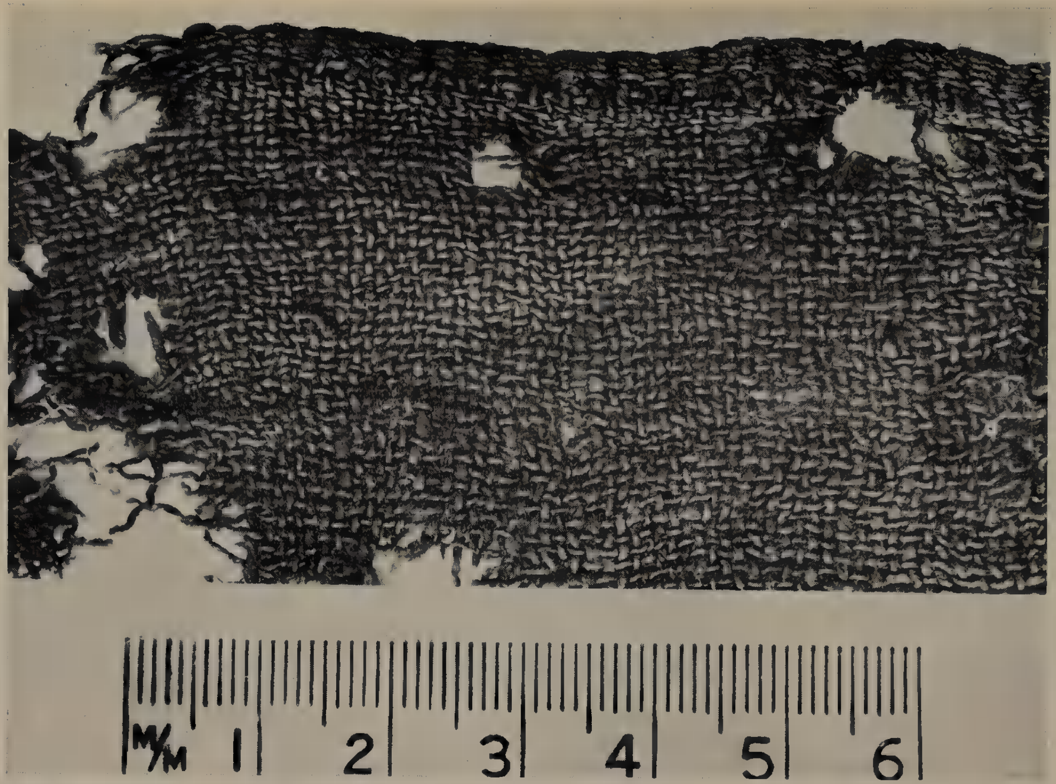


a. Linen fragments with colored wool band. No. 4.

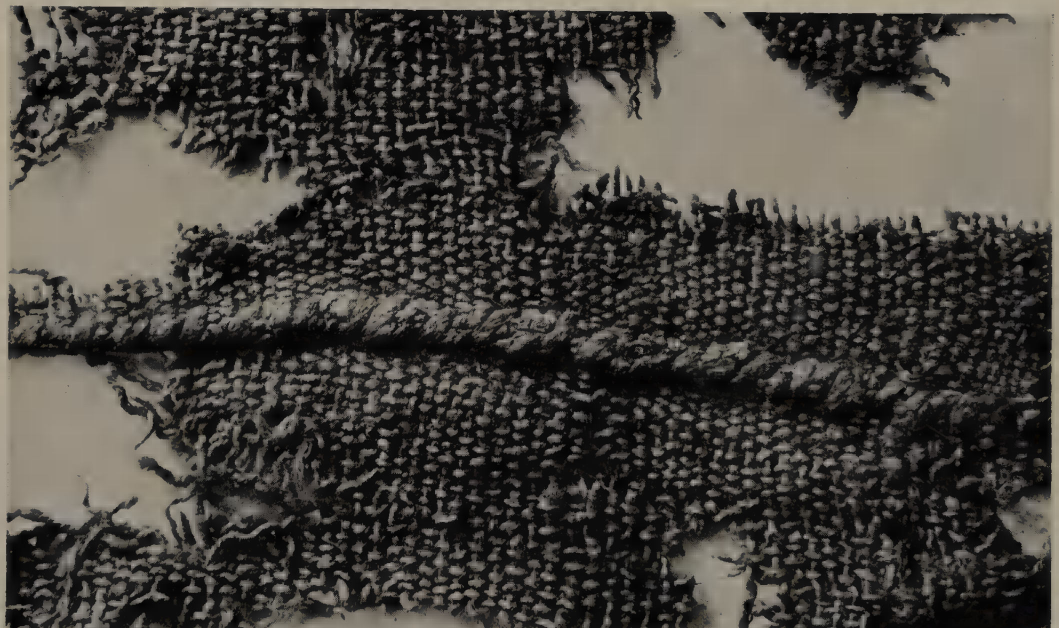


b. Fine linen cloth. No. 8. Photographs by Hallam Ashley, Norwich.

Plate 85.

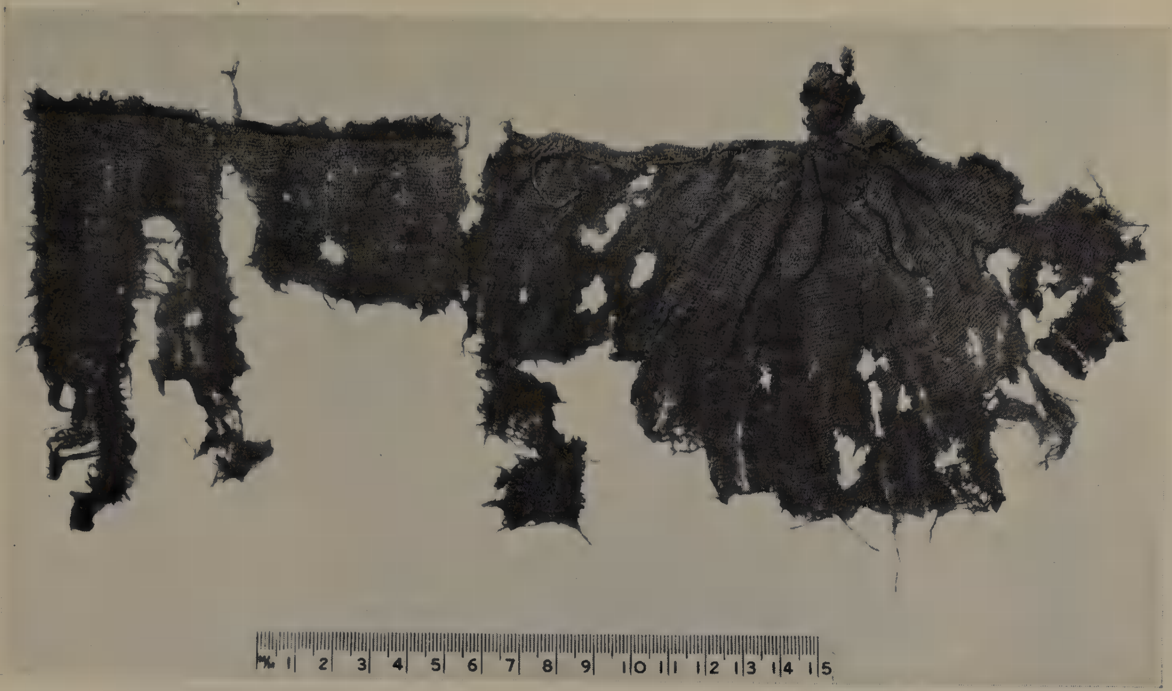


a. No. 5 detail.

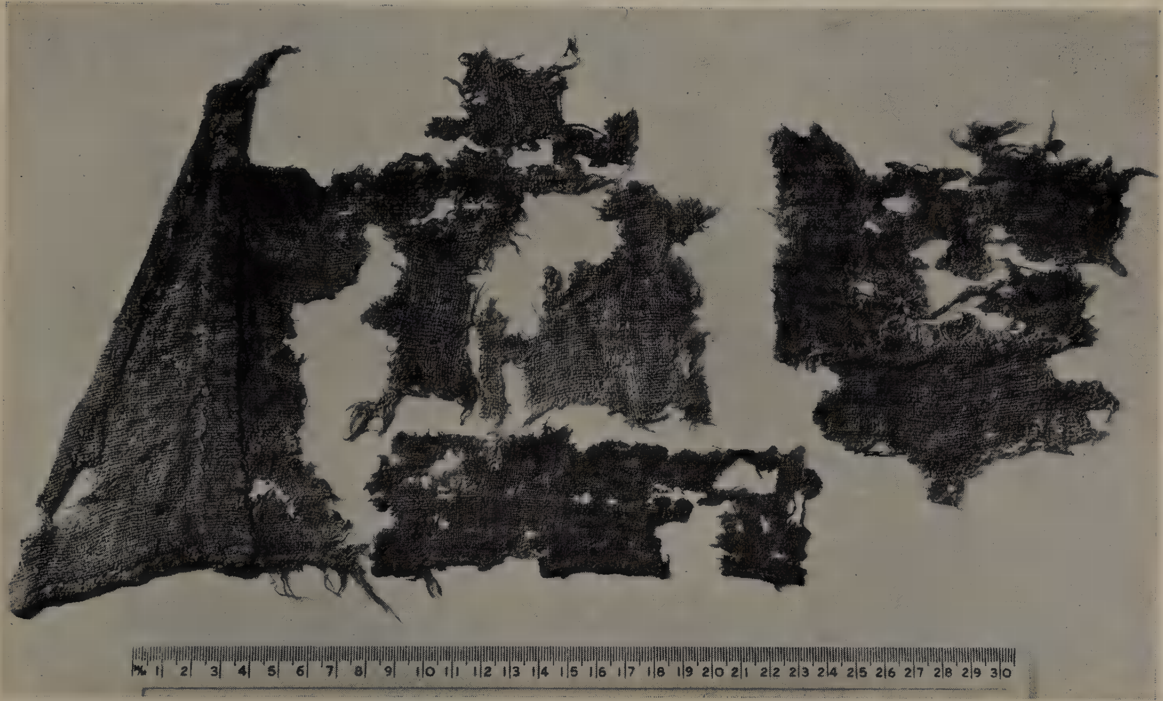


b. No. 5 detail. Photographs by Hallam Ashley, Norwich.

Plate 86. Linen undyed cloth.

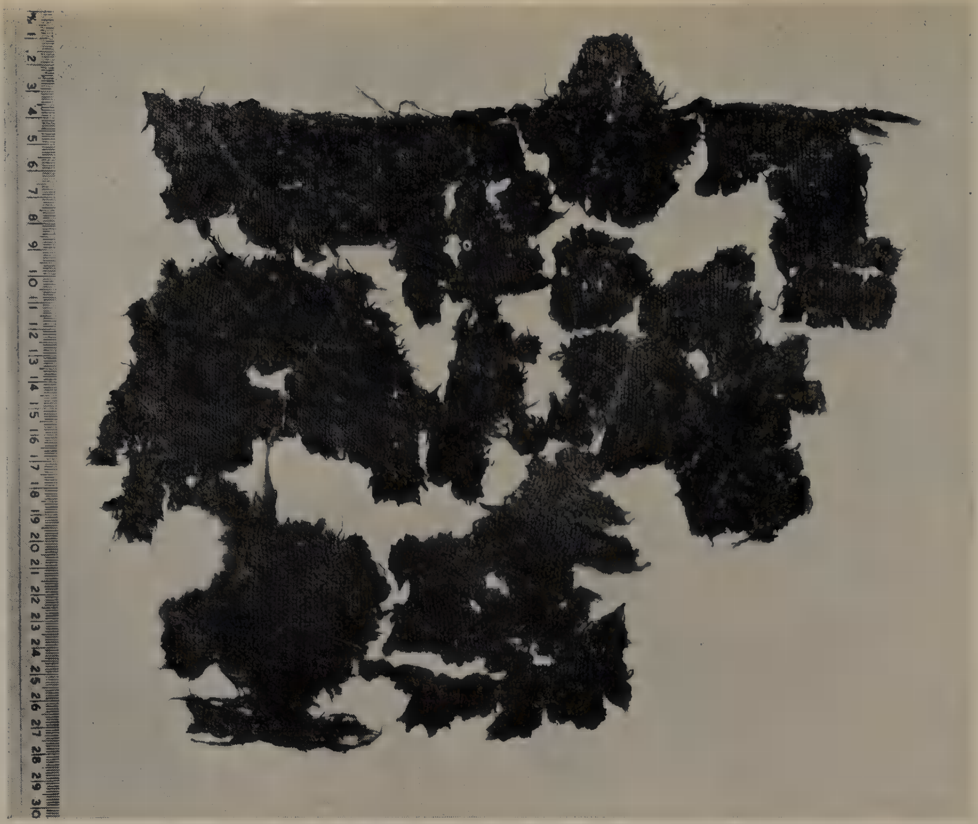


a. No. 11.

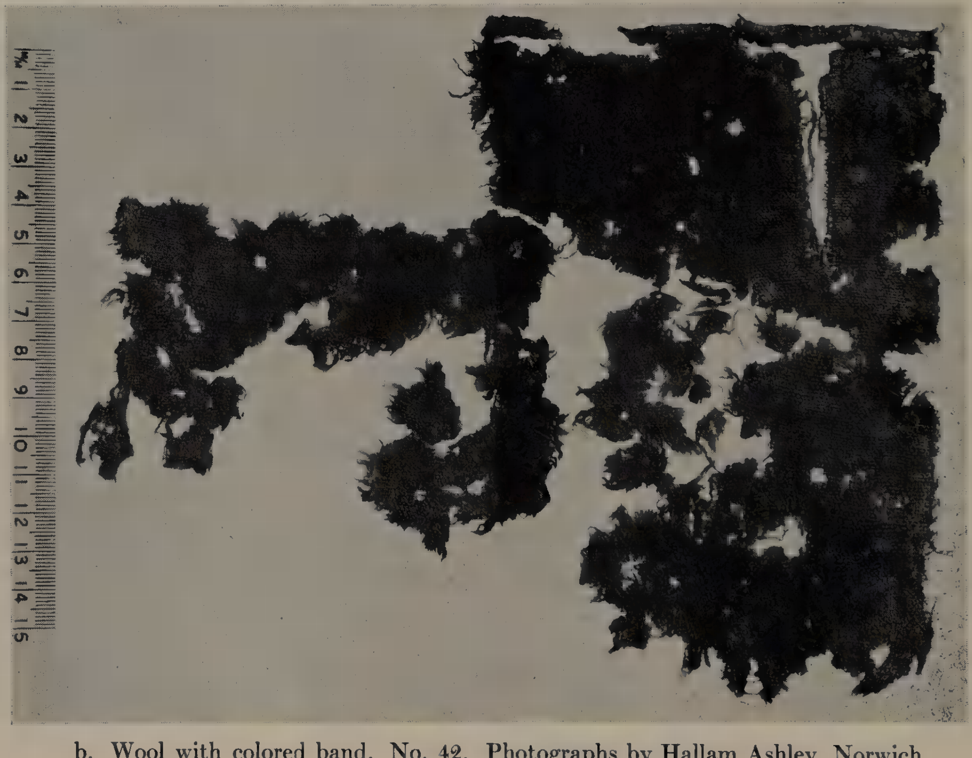


b. No. 13. Photographs by Hallam Ashley, Norwich.

Plate 87. Plain linen cloth.

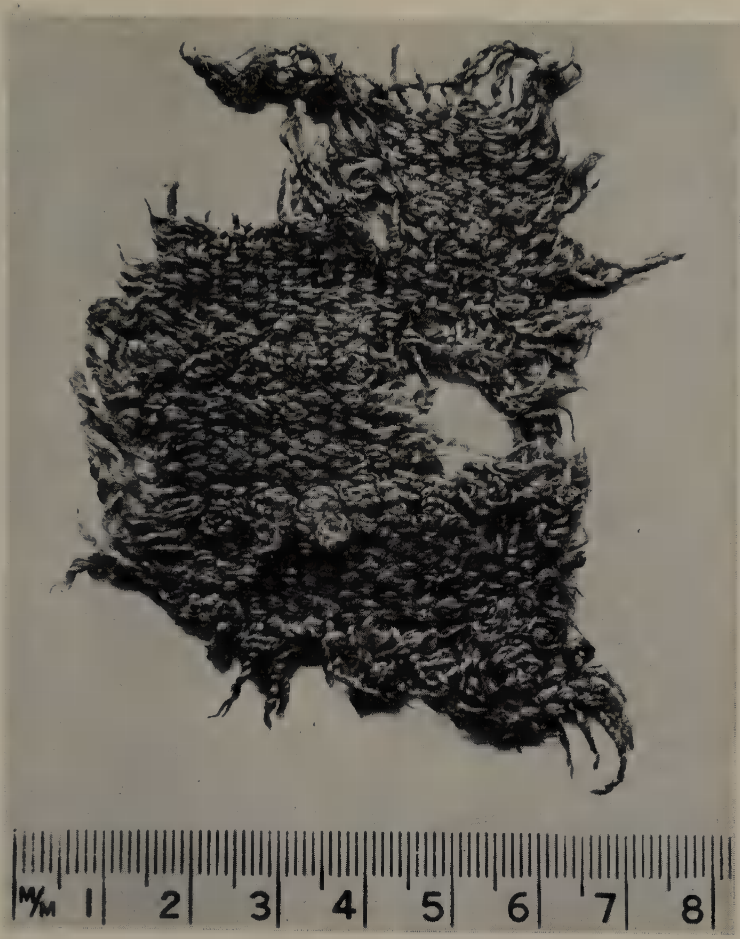


a. Basket weave linen. No. 36.

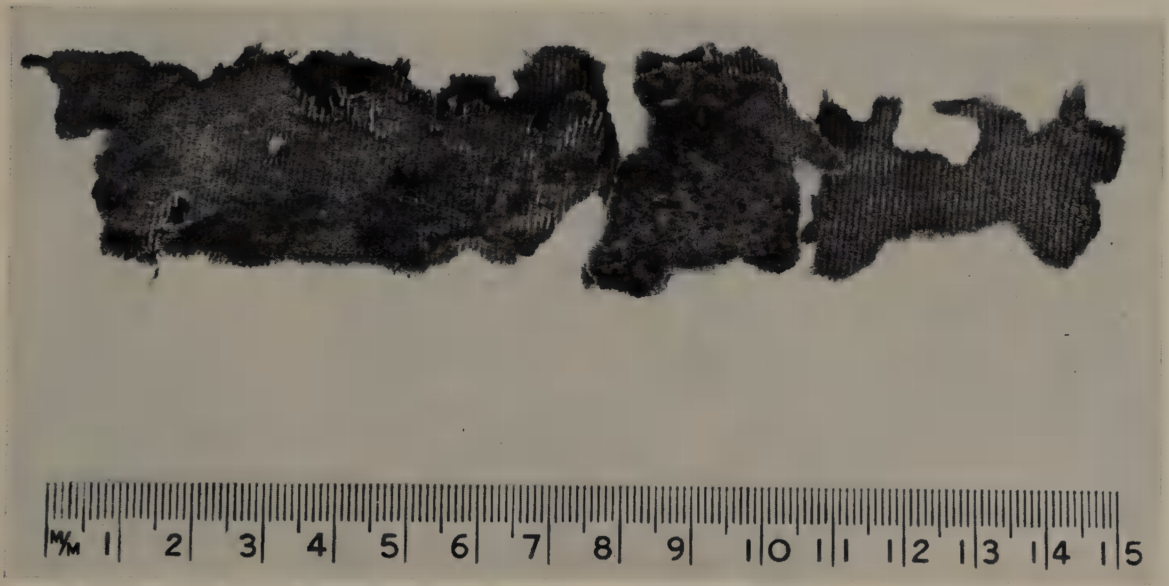


b. Wool with colored band, No. 42. Photographs by Hallam Ashley, Norwich.

Plate 88.

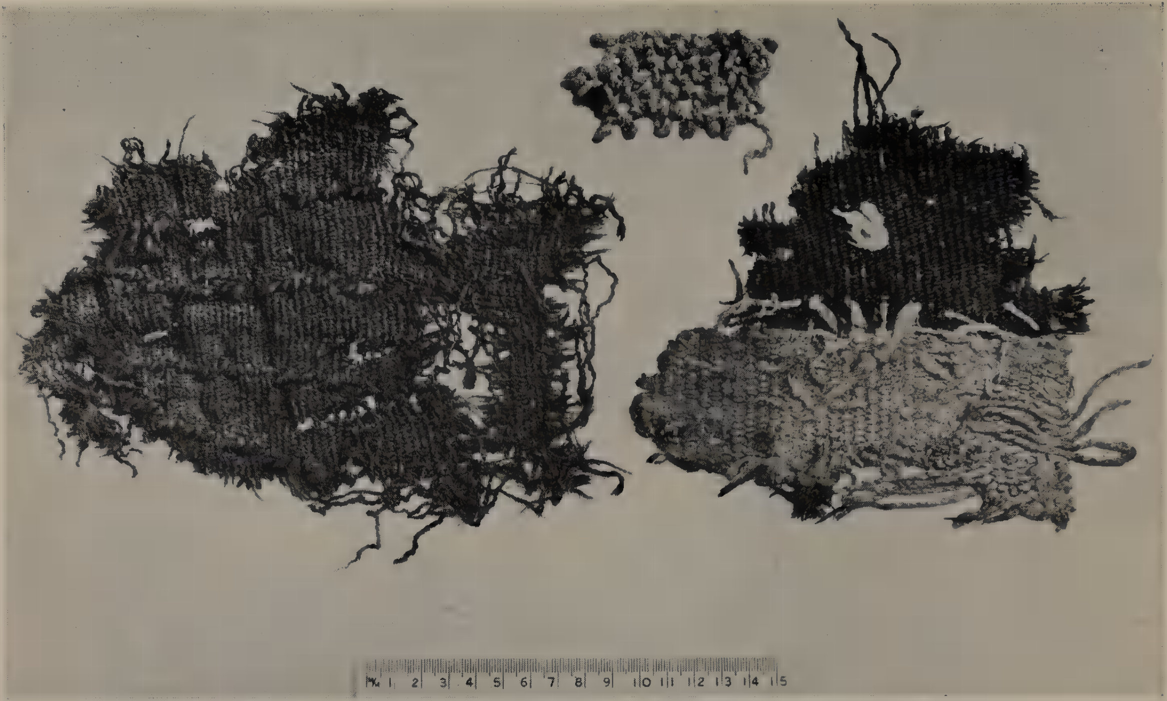


a. Fine wool fragment with pile. No. 47 front.

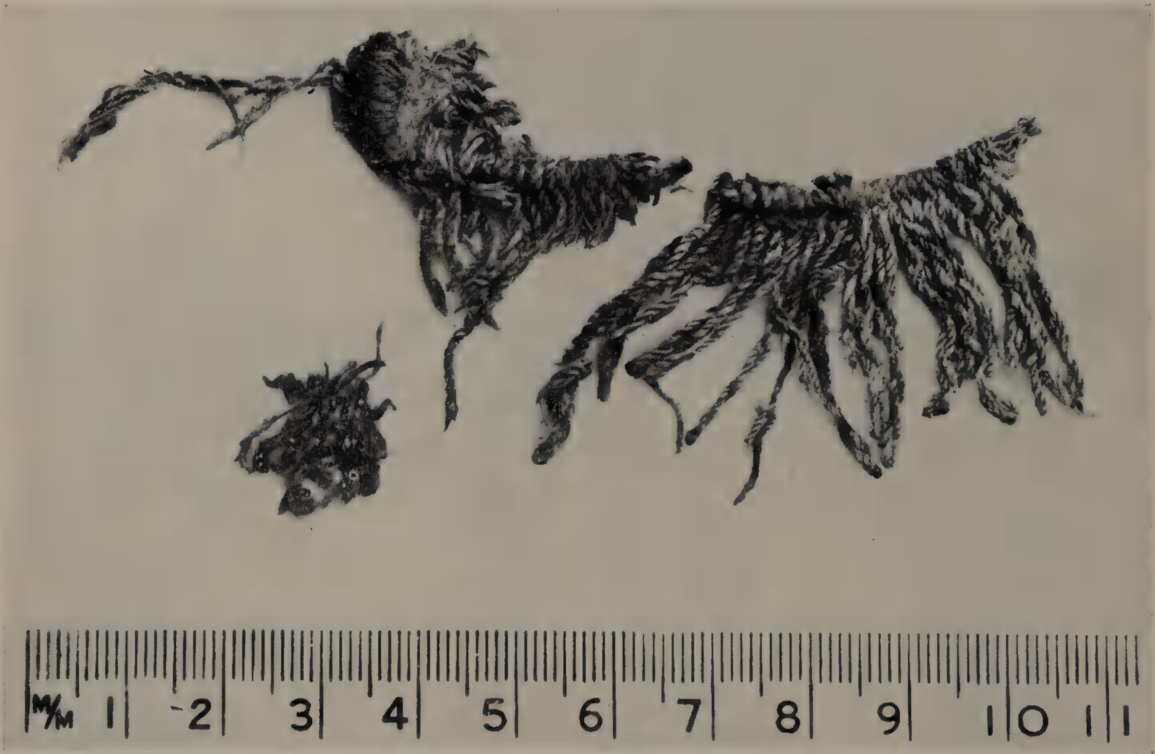


b. Wool tubular braid. No. 48. Photographs by Hallam Ashley, Norwich.

Plate 89.

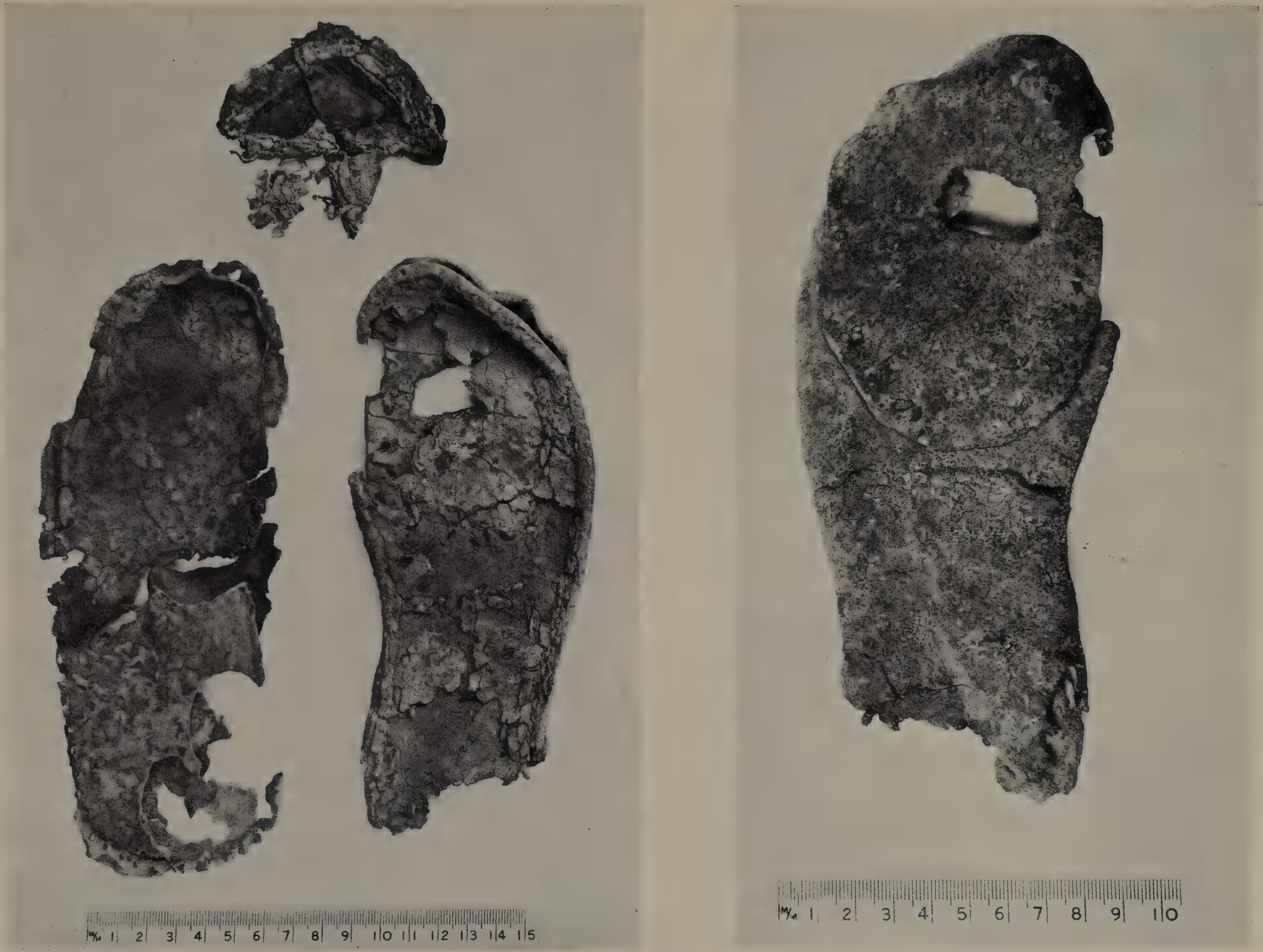


a. Tent Fabrics: left, No. 51; center, No. 49; right, No. 50 with Braid No. 54.



b. Net ?, No. 60, Photographs by Hallam Ashley, Norwich.

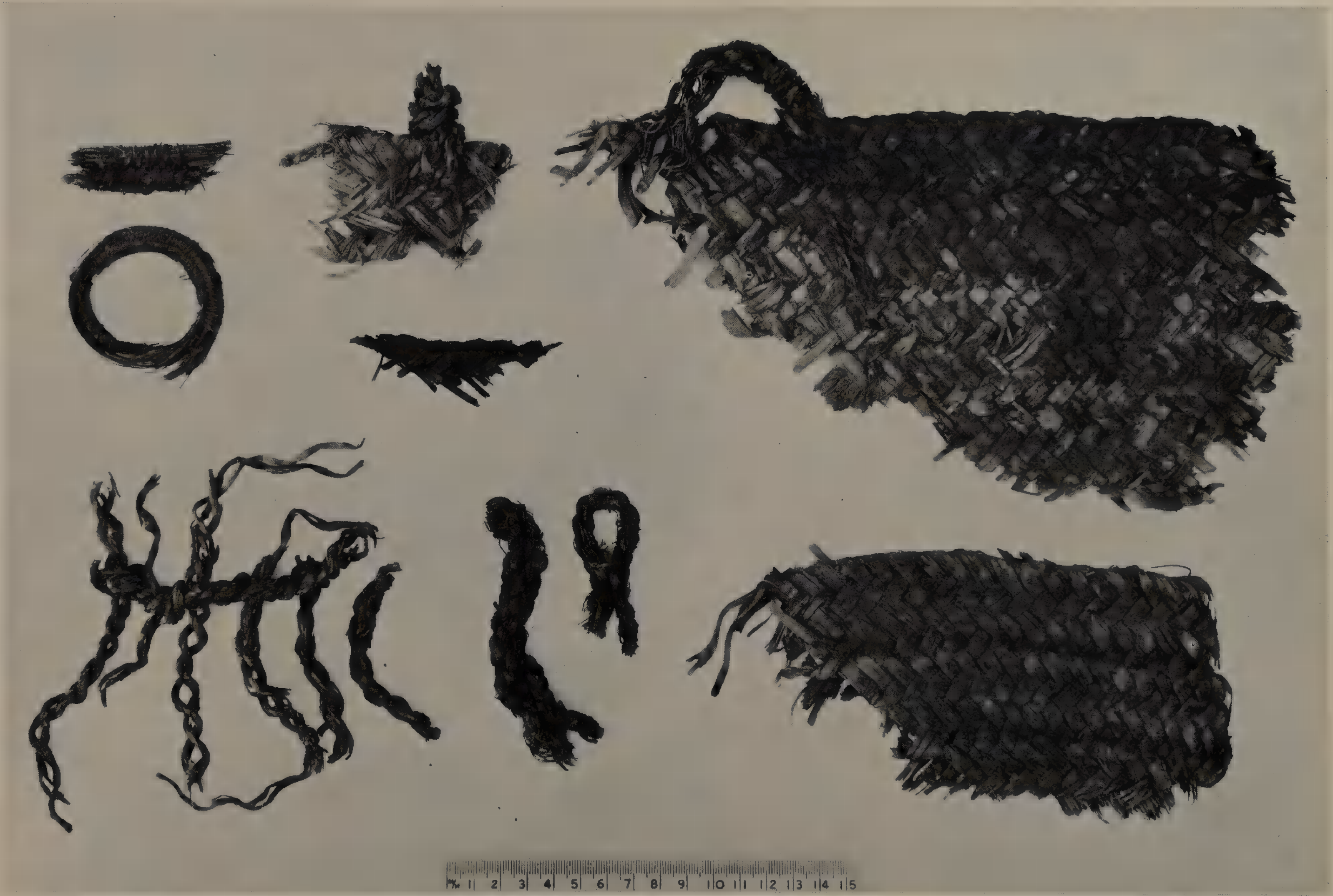
PLATE 90.



a. (At top.) An unidentified stitched specimen, possibly harness or other equipment. No. 3.
b. Fragments of shoe assembled together in a conjectural reconstruction. No. 1.2-6.
c. Shoe sole, right foot, No. 1.1.

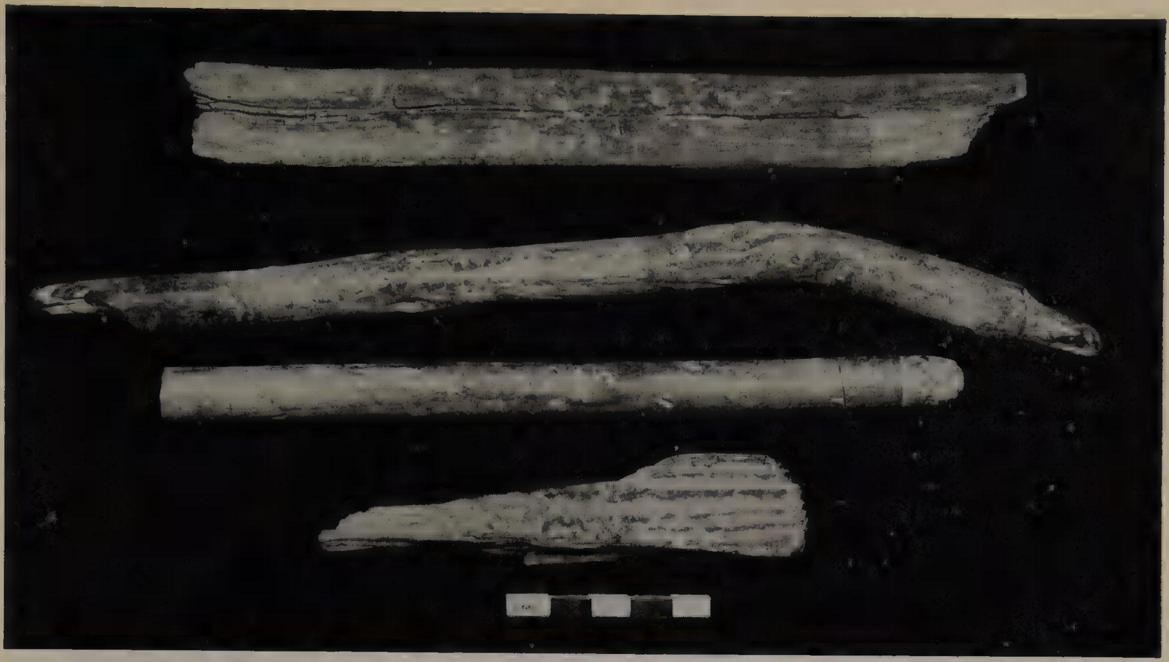
d. Reverse of c, No. 1.1.

PLATE 91. Shoe and Leather Fragments. Photographs by Hallam Ashley, Norwich.

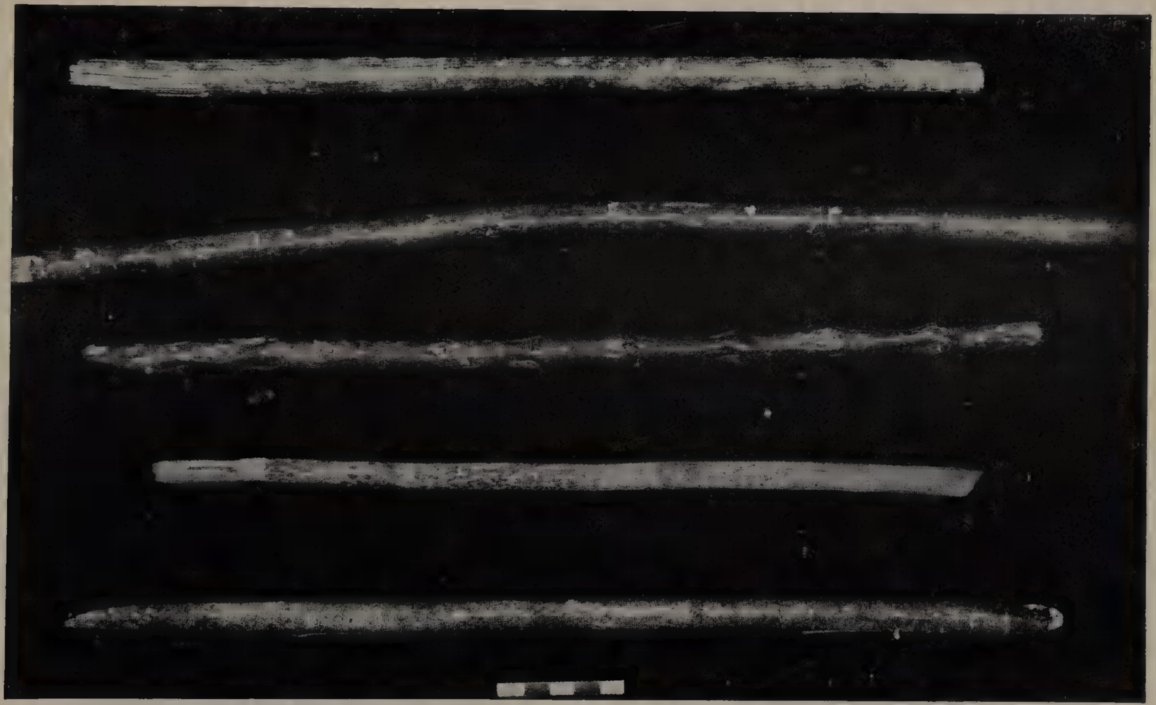


a. Top left, No. 1.
b. Second row left, No. 2.
c. Top center, No. 5.
d. Second row center, No. 6.
e. Top right, No. 3.
f. Bottom right, No. 4.
g. Bottom center, No. 7.
h. Bottom left, No. 8.

PLATE 92. Basketry. a-b are coiled, c-g are plaited, h is twisted. Photographs by Hallam Ashley, Norwich.

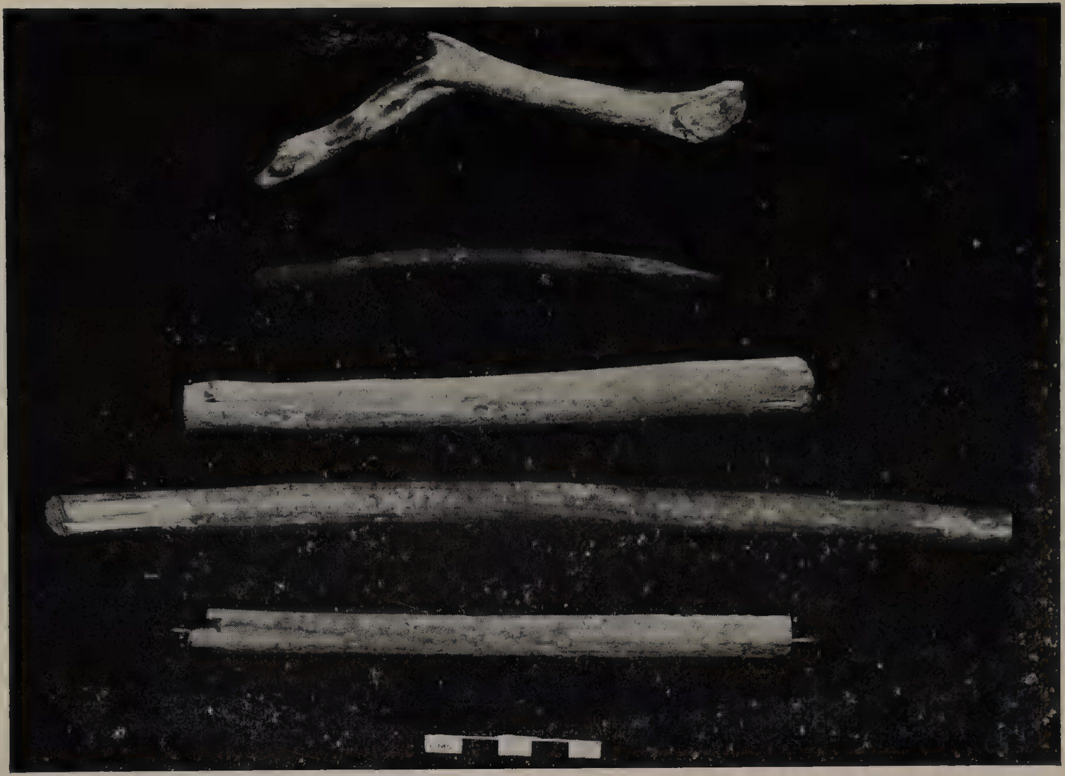


a. No. 4. A flat batten with rounded edges, done with knife or spokeshave.
No. 7. Trimmed to shape by knife or axe at one end.
No. 1. Whittled, smoothed and trimmed to a rounded end to fit into a socket.
No. 11. A flat batten.

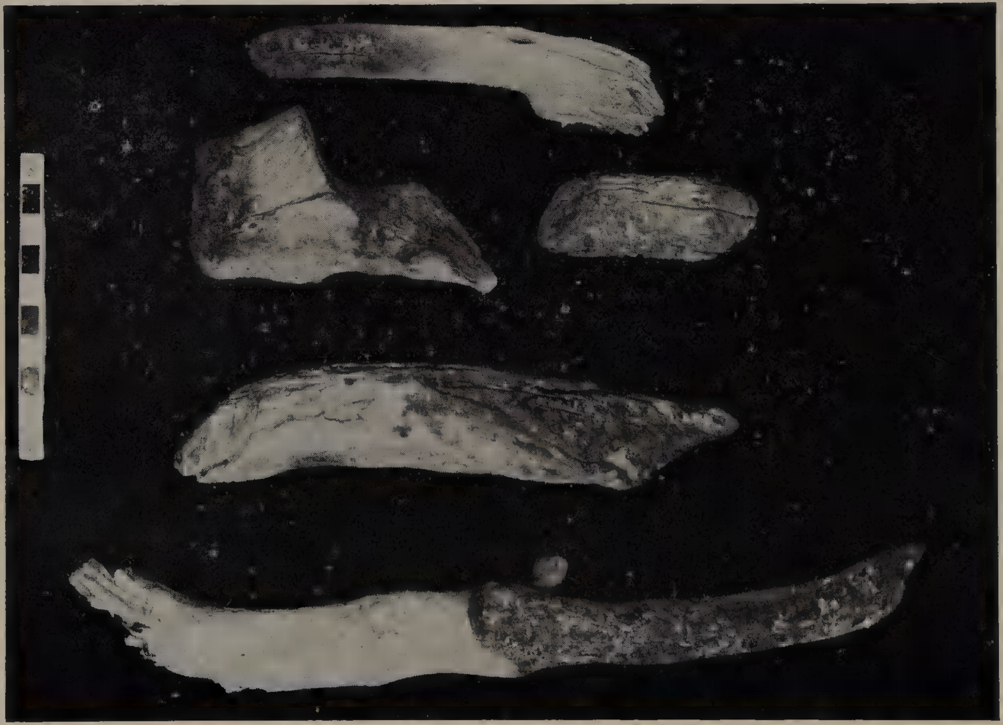


b. No. 2. Turned.
No. 6. Whittled and smoothed.
No. 5. Rounded smooth at one end.
No. 10. Whittled.
No. 8. Rounded at one end.

PLATE 93. Worked Wood. Top to bottom:

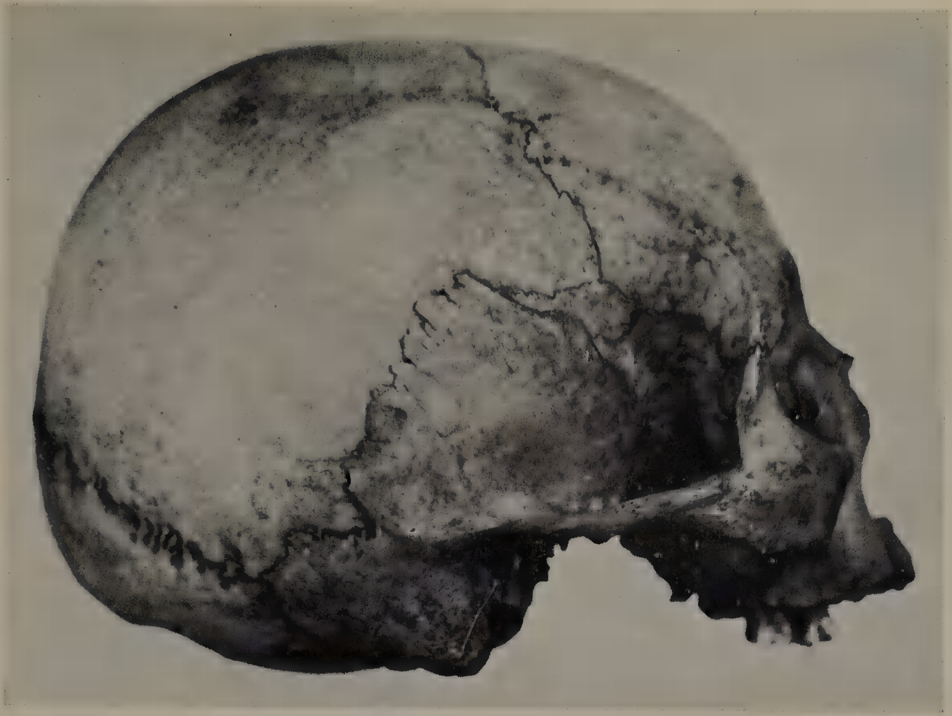


a. No. 9. Axe cut and burnt.
No. 14. Sharpened to a point.
No. 12. Whittled.
No. 3. Whittled.
No. 13. Whittled.

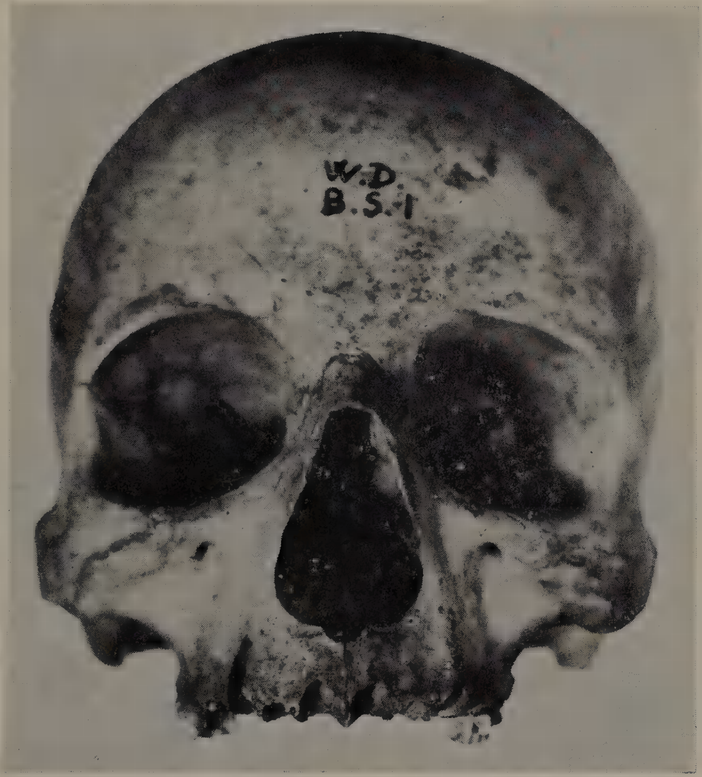


b. Unnumbered pieces showing axe marks.

PLATE 94. Worked Wood. Top to bottom:



a. Lateral View of W. D. BS 1. Male. Note *os epiterica.*



b. Facial View of W. D. BS 1. Male.

PLATE 95. Cranial Material.

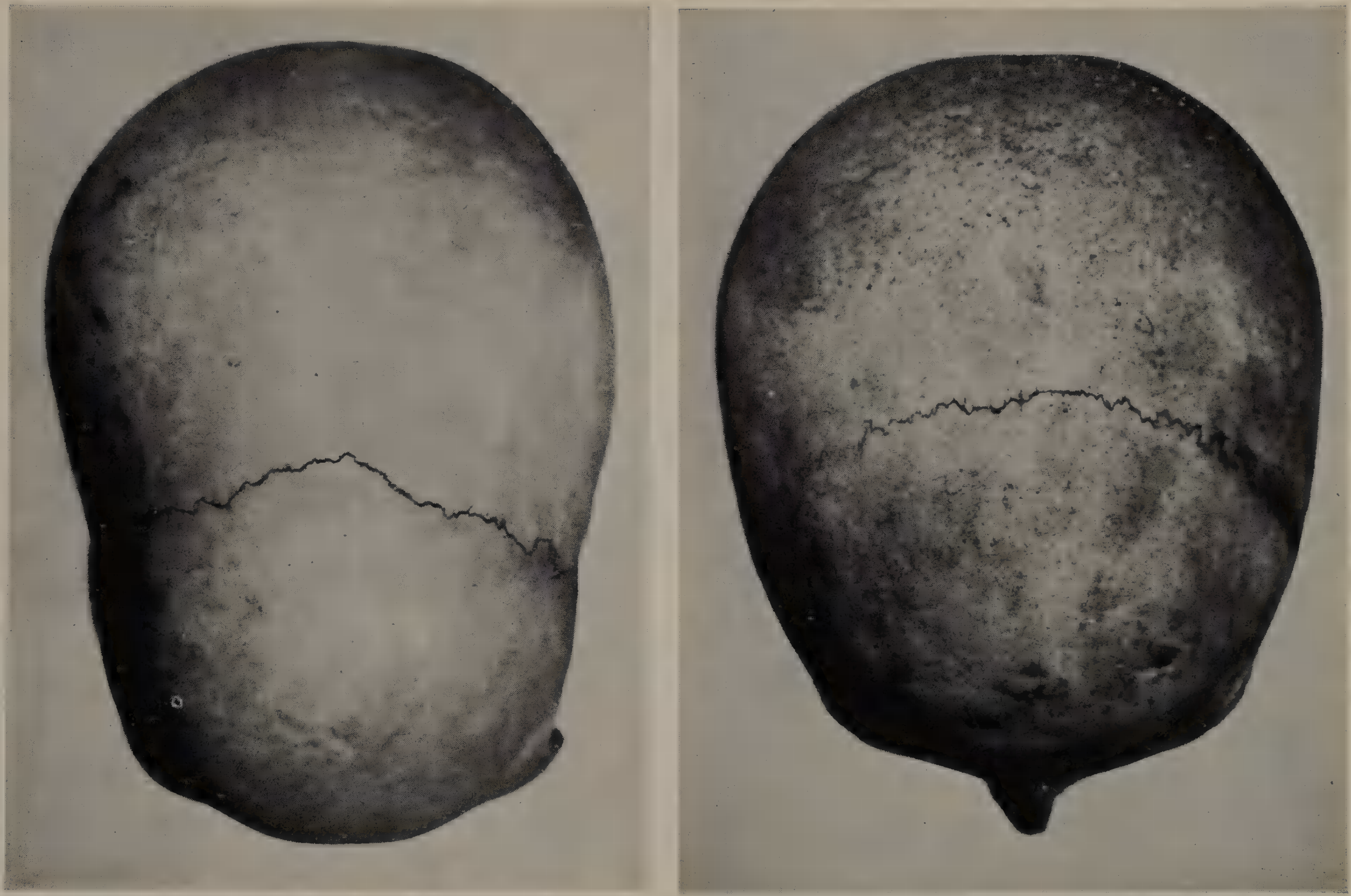
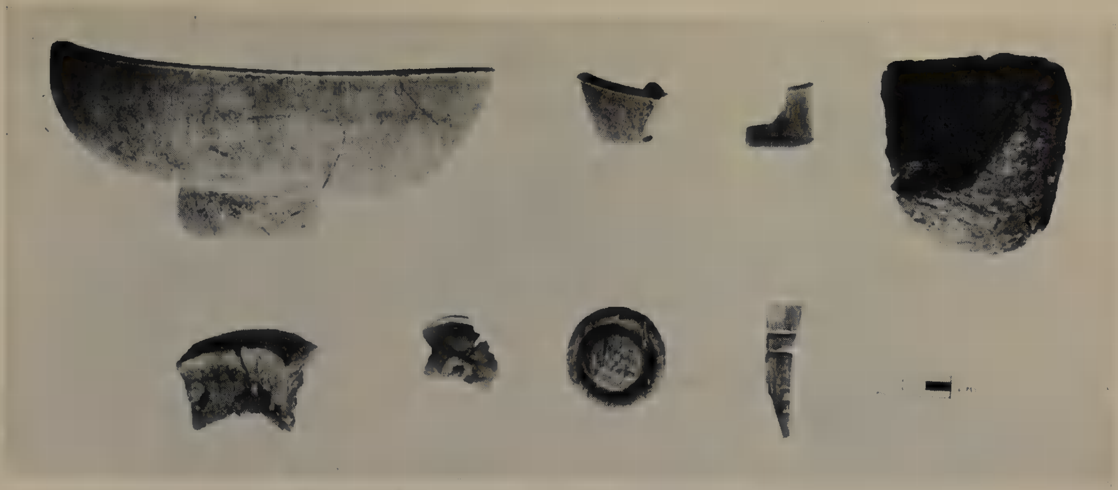


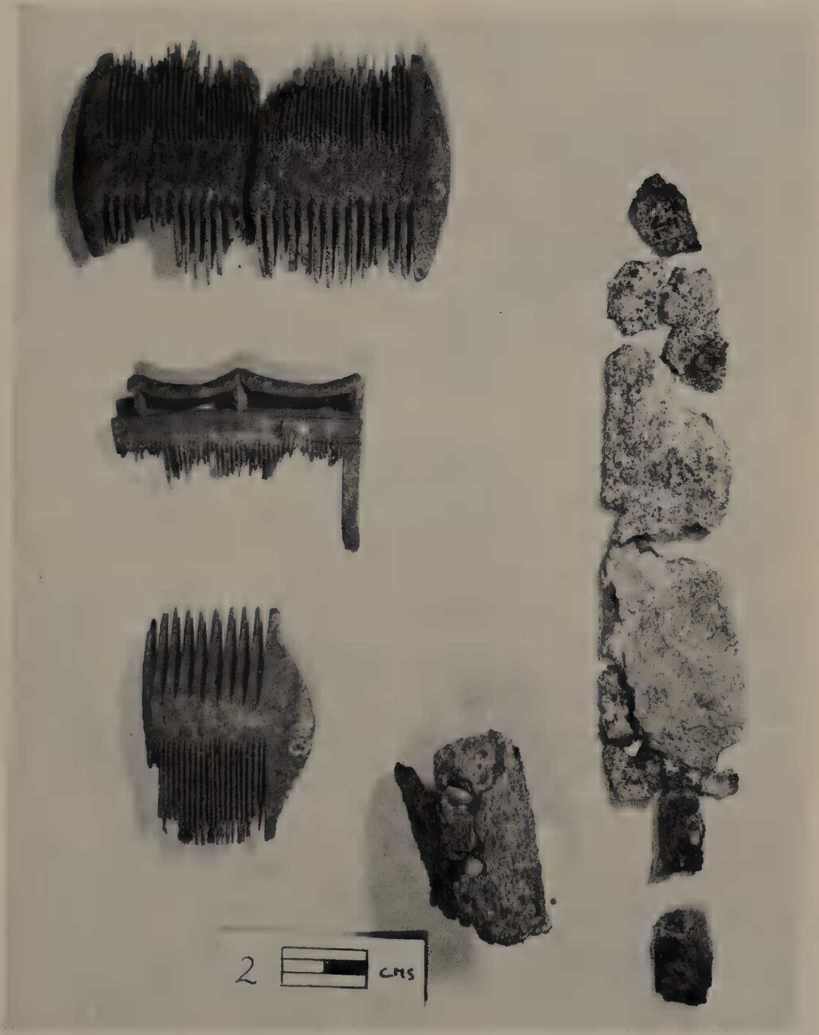
PLATE 96. Cranial Material.

a. Vertical View of W. D. BS 27. Male. Note premature closure of sagittal suture. Dolichocranic.

b. Vertical View of W. D. BS 43. Female. Note premature closure of sagittal suture. Brachycranic.

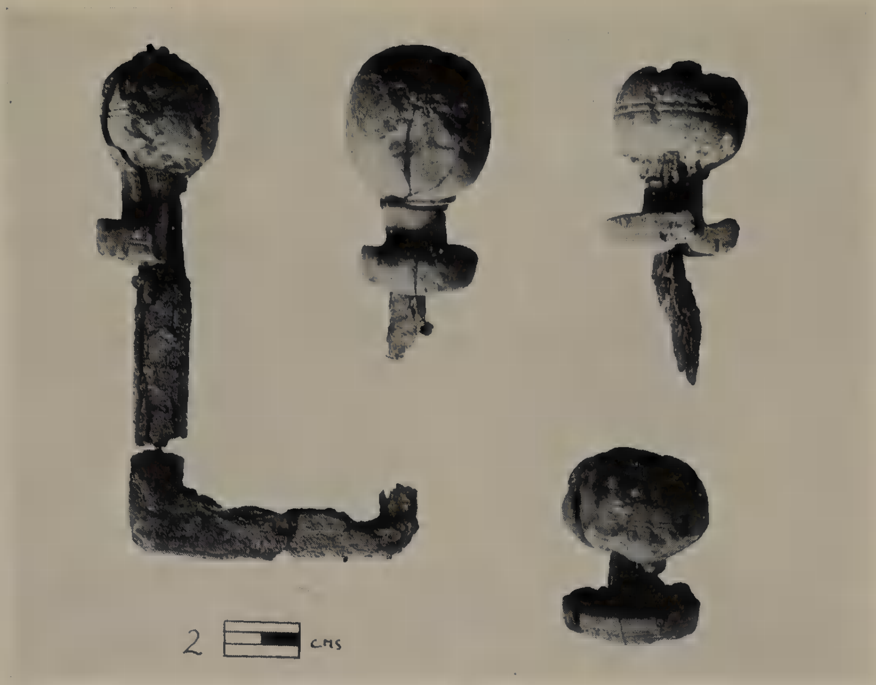


a. Wood and Bone Objects. Drawn in Pl. 31: 1-5, 7-9.

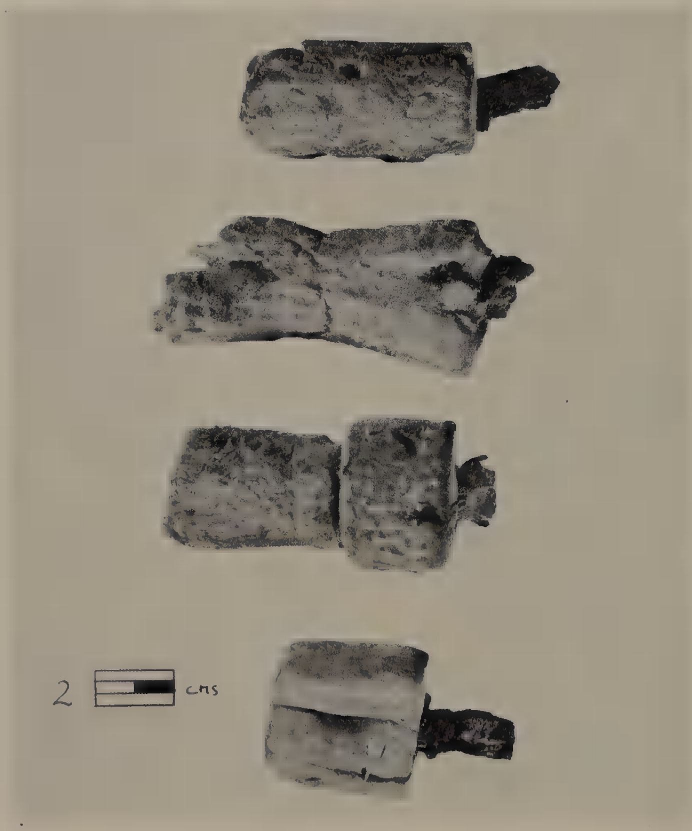


b. Wooden Combs and Knife Blade and Handle. Drawn in Pl. 32: 1-4.

PLATE 97.



a. Drawn in Pl. 33.



b. Drawn in Pl. 34.

Plate 98. Wooden Handles from Cave II, Room 4.

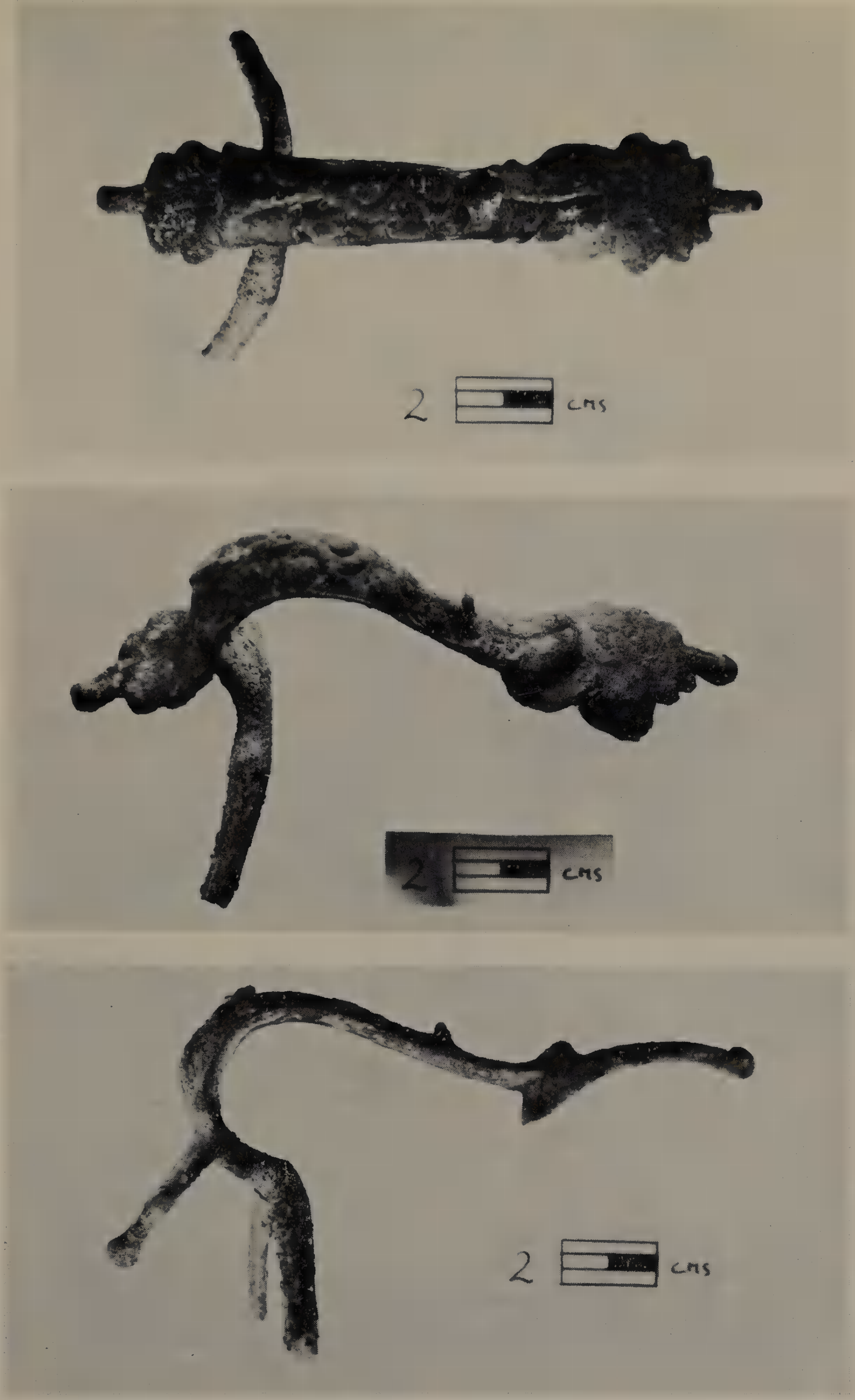
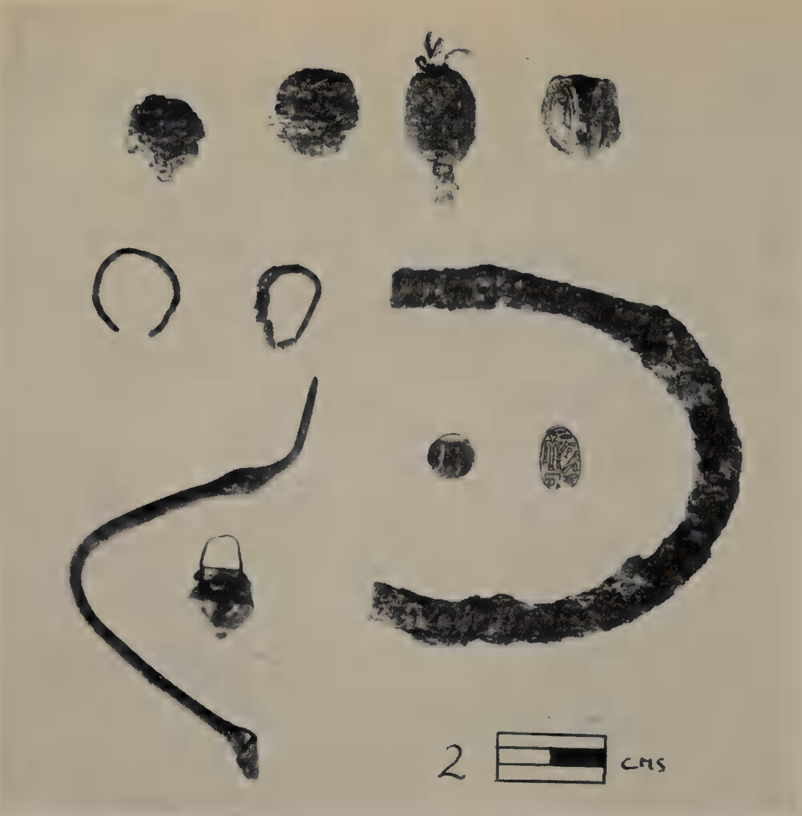


PLATE 99. Bronze Jug Handle from Cave II, Room 4. Drawn in Pl. 35.



a. Objects from Cave I. Clay sealings, bronze earrings, horseshoe, bronze toggle pin, silver earring, fourth century coin, and scarab. See Pl. 36.

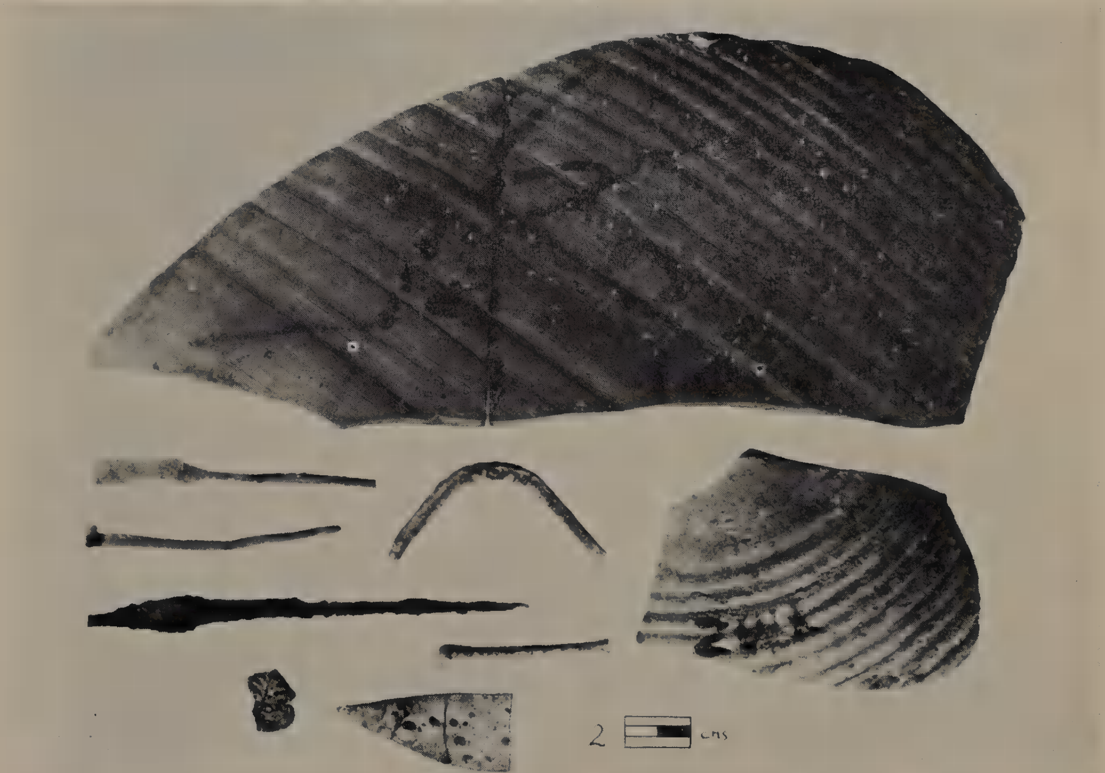
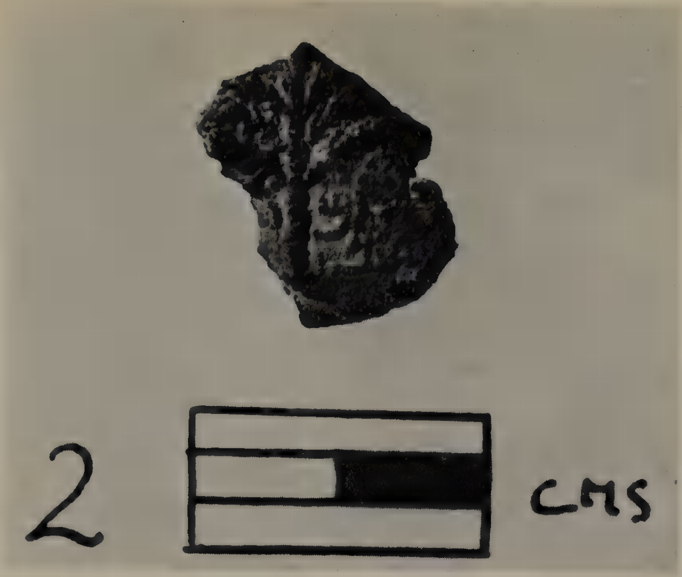
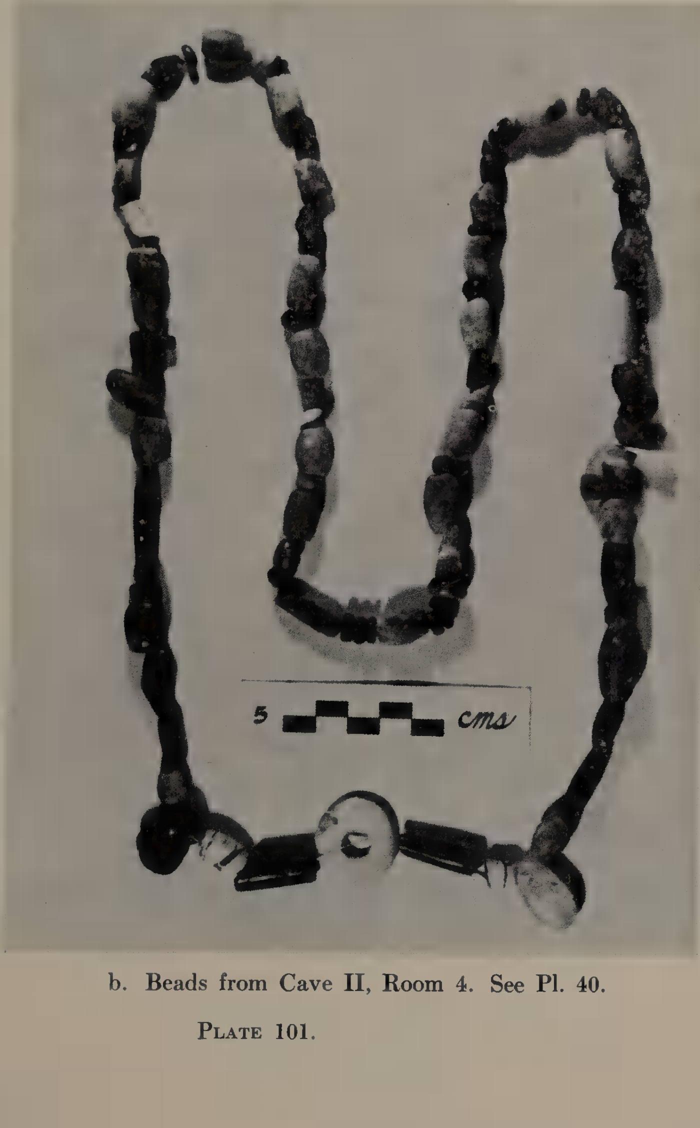


PLATE 100. b. Objects from Cave II. Ostraca, kohl stick, pin, iron pike or javelin head, iron fragments, and Second Revolt coin. See Pl. 37.



a. Second Revolt Coin. See Pl. 37: 9.



b. Beads from Cave II, Room 4. See Pl. 40.

PLATE 101.

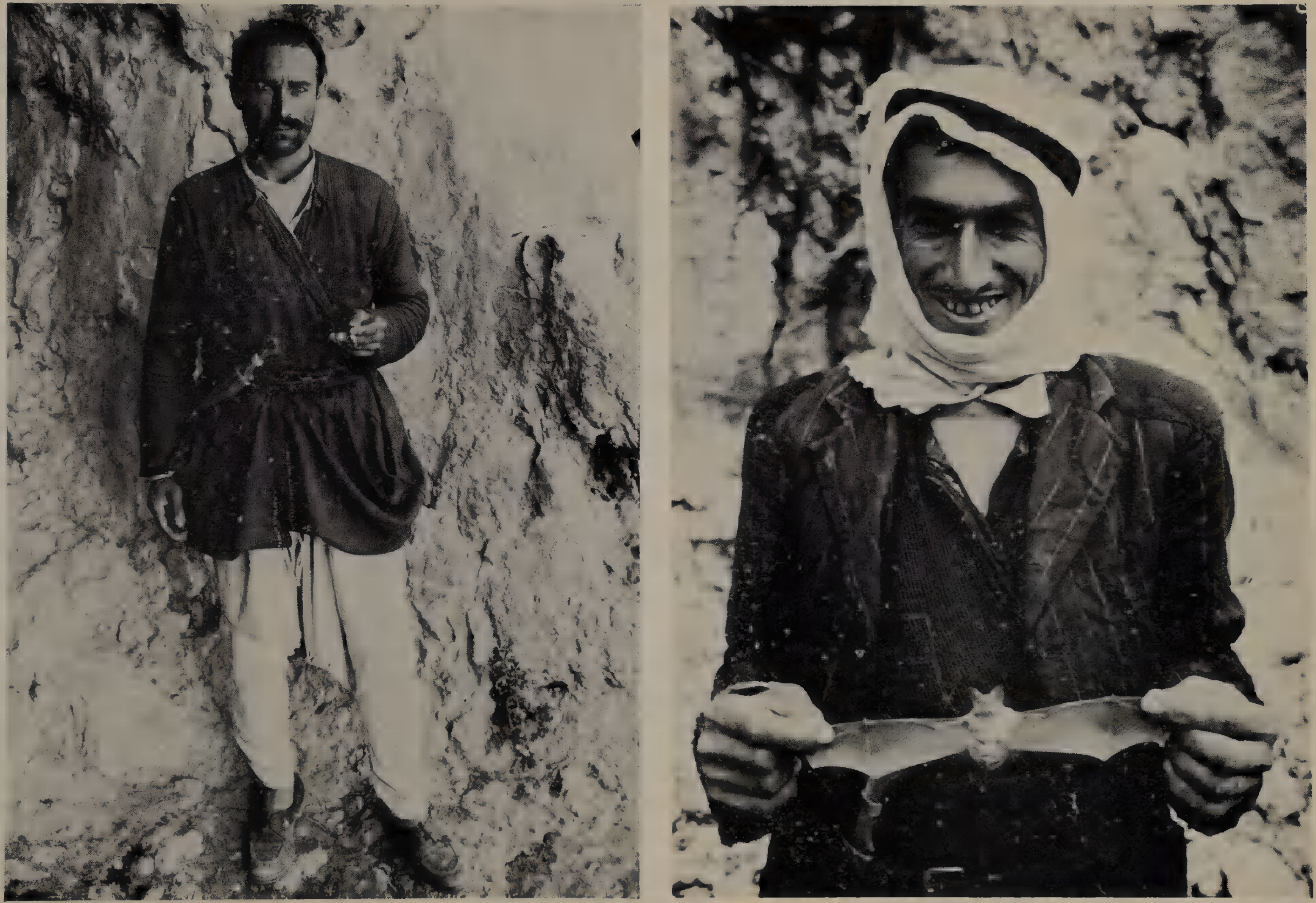


Plate 102. a. Muhammed edh-Dhib Hassan, one of the Ta'âmireh workers in the cave clearance who had as a shepherd boy in 1947 made the first of the manuscript discoveries at Qumrân.
b. An Arab workman shows one of the modern inhabitants of the caves.

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by Paul W. Lapp and Nancy L. Lapp. With
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Cambridge, Mass., American Schools of
Oriental Research, 1974 [i.e.1975]
106p. 102 plates. 27cm. (American Schools
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1930-1970. II. Lapp, Nancy L
III. Series.
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